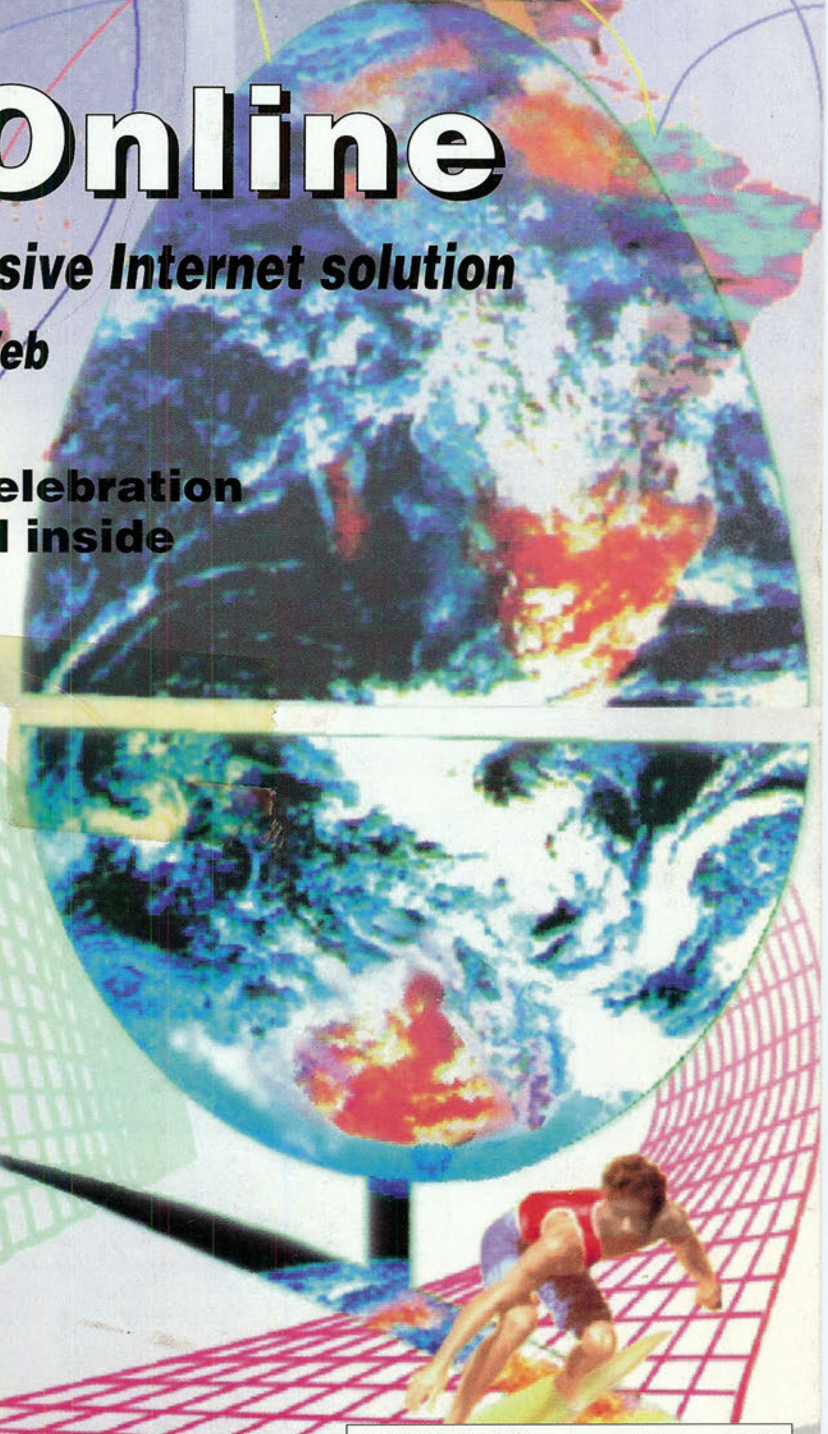
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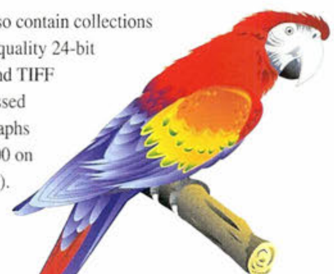
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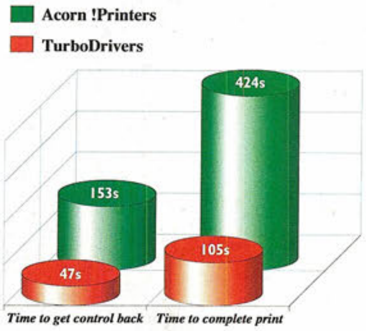
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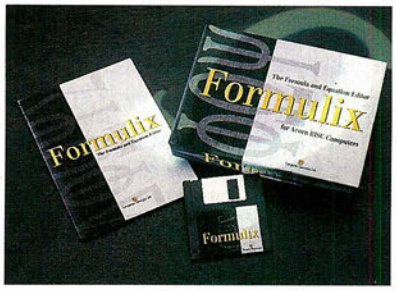
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Editor's letter

These days, you can't move for talk about the Internet. I make no apologies for mentioning it once again, as we have managed to put together the best Acorn Internet offer ever, in conjunction with ArgoNet, VTi's new Internet company. Flick to page 36 for more details.

There's an ulterior motive for our offer, of course. We want everyone to be able to access the *Acorn User* Web site, which will be up and running by the time you read this. It's still in quite an embryonic stage at the moment, but with your help and comments, it will become *the* source for independent Acorn information on the Internet. Hope to see you on-line.

Mark Moxon, Editor

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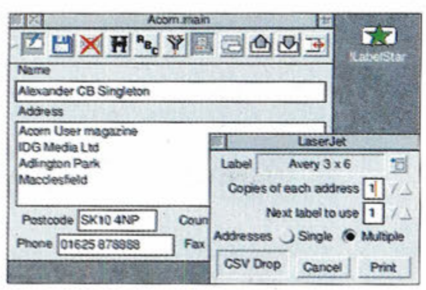
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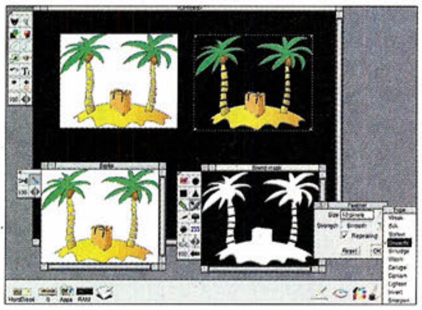


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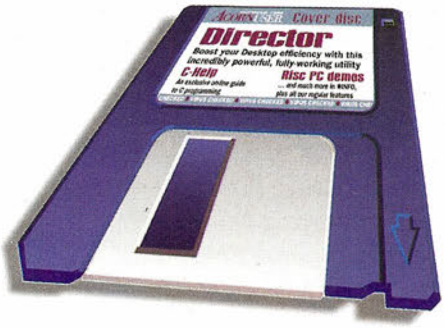
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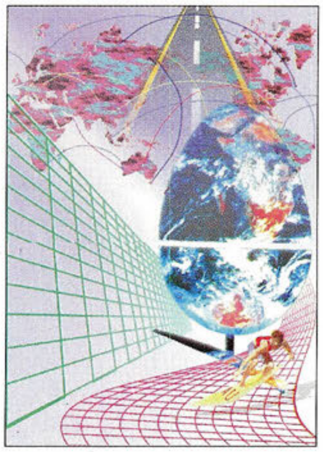
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FEATURES









Next month in Acorn User

Acorn User awards

The *Acorn User* editoral staff reveals its choices for the best software and hardware around today – and we found out how you, the reader, voted in the *Acorn User* Reader Awards in the August issue.

The Acorn World show

We have eight pages packed full of information about the annual Wembley show, including all the new products which will be on display. So if you're thinking of going to the show, or just want to stay bang up-to-date on the Acorn scene, you can't miss it.

Reviews galore

Our experts have been busy scrutinising all the latest Acorn products, and this is the result; pages of reviews to help you decide how to spend your money either at Acorn World or in the run up to Christmas.

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PicturePoint site licence, KS1,2	LONG	£89
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PipeDream 4	COLT	£85
Plantwise, age 9-14	SHER	£42
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Plot	CLAR	£63
Poster	4MAT	£74
Presenter GTi	LIND	£66
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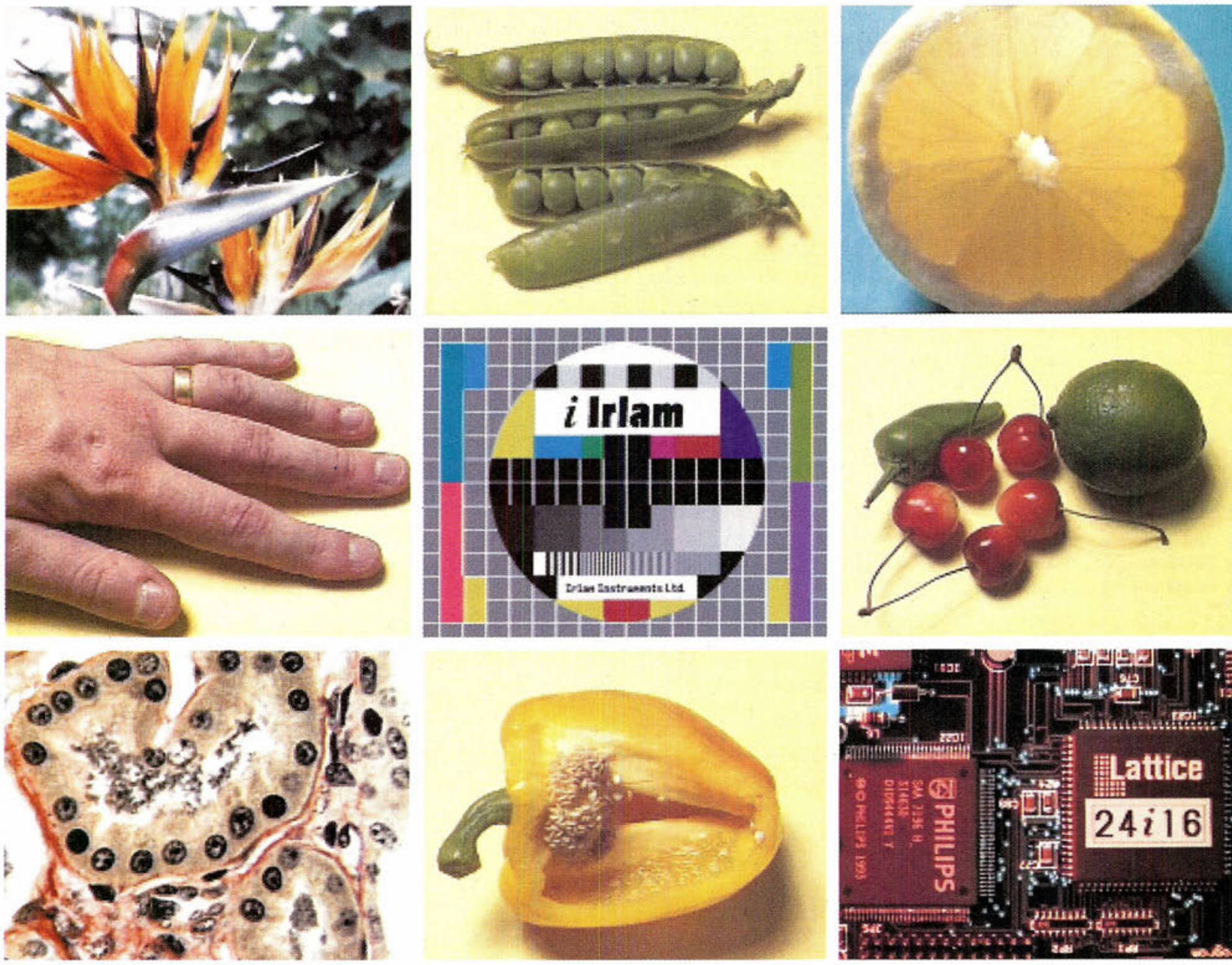
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Acorn community stunned by resignation of Sam Wauchope

ACORN'S popular and approachable managing director of five years, Sam Wauchope, has surprised the Acorn world with his resignation. There was no outward warning of his departure, but Wauchope was swiftly replaced by David Lee, who was a director of finance and administration at Olivetti UK. By all accounts, the transition between Wauchope and Lee was smooth and far from acrimonious.

Acorn User was able to speak to Sam Wauchope at Acorn's head office in Histon the day after his resignation was announced. Wauchope told *Acorn User* he was disappointed with the situation, but not bitter, and shrugged it off as something you invariably have to face in business. He also declared his continuing support for Acorn Computers Limited and the Acorn group as a whole. Wauchope would not reveal why he had left Acorn, but confirmed he had no immediate plans regarding his future employment.

The day we spoke to Wauchope, David Lee was already being installed as his replacement, but was not willing to talk with us so early in his tenure. However, ten days later, David Lee was confident enough to respond to some questions we put to him:

Acorn User: 'There is some speculation that your predecessor might have left Acorn in some part due to negative reaction to the recent education channel changes. Are these changes set in stone or is there a possibility they could be modified in the light of dealer reaction?'

David Lee: 'I'm not in a position to comment about Sam Wauchope's resignation, but I can confirm that the channel changes were approved by the board, reviewed since I arrived and I have no intention of making any modifications in the light of reaction from certain dealers.'

AU: 'Naturally, there is great curiosity about what lead up to Sam Wauchope's departure. Apart from a poor year-end result (1994) which was largely explained by a continuing poor education market conditions and investment in Online Media, there are few obvious signs as to why Wauchope should have been forced to resign. Indeed, the apparently successful rights issue and, depending on your point of view, incisive agency strategy might have been seen as feathers in his cap. What can you tell the Acorn world about this matter?'

DL: 'Once again, I'm not in a position to comment. It's between Sam and the board. There is no hidden agenda – I have Sam's home phone number and I'm not looking to denigrate what Sam has done.'

AU: 'How aware are you of the considerable bad feeling among dealers, software developers and customers *Acorn User* magazine has been monitoring in the wake of the introduction of the education agency programme?'

DL: 'I have had no letters or feedback from developers. All correspondence has been answered to date.'

AU: 'You have a background in financial management and accountancy in particular. This might suggest to some that you have been appointed to manage a cost-control regime at Acorn, which could stifle future innovation and product launches. Do you feel such suggestions are fair?'

DL: 'No, they're not fair. I don't deny cost-management is part of the equation. My first objective is to enhance the shareholder value by growing the business profitably. We are going to do that by providing products and services customers want. That will lead to improving and extending the range of products and keeping costs under control. I don't accept the link made between cost control and launches and new products – they're not mutually exclusive.'

AU: 'According to a recent *Financial Times* report, Olivetti's own PC division continues to perform unprofitably. Olivetti is obviously addressing this problem in a number of ways. Will this inevitably put pressure on Acorn as an Olivetti subsidiary?'

DL: 'Acorn is in a different division – Olivetti Telemedia. The PC division sells through an indirect channel or via the systems and services division of Olivetti.'

AU: 'Has your admittedly brief introduction to the Acorn world left you with any lasting impressions you can share with us?'

DL: It's too early for lasting impressions. But for first reactions, I expected a huge culture shock but the transition has been far easier than expected. The team is enthusiastic and committed and has shown the willingness to be flexible in changing with a changing marketplace. And that's sincerely meant.'

Marco De Benedetti, Olivetti Telemedia's chief operating officer, finds David Lee's 14 years with Olivetti praiseworthy. However, he also warns that Acorn 'must develop its business if it is to thrive in a very competitive, changing market.' De Benedetti sees David Lee's role at Acorn as being one of continuity, which is backed up by Lee's confirmation that the recently announced unpopular education channel changes will go ahead. Lee, aged 52 and married with two children, is a chartered accountant by trade and has spent the last 20 years in the IT sector. His notable achievement at Olivetti was an award-winning in-house staff development programme.





Sam Wauchope, left, who leaves his job as MD of Acorn after five years. David Lee, right, claims '...the transition has been easier than expected.'

Profile of Sam Wauchope

The outgoing Sam Wauchope will certainly be missed by many in the Acorn world. Wauchope impressed journalists with his approachability and plain-speaking. He was credited with the move to spin-off ARM Limited, to set up Online Media, and see through the successful rights issue earlier this year. Wauchope had spent ten years in all at Acorn, being promoted from finance director to managing director in 1990. Acorn has grown modestly and largely stayed in the black during the 1990s, though the 1994 year-end was a black mark on Wauchope's record. Unconfirmed speculation suggests that a combination of poor recent financial results, the failure of the German operation to shine combined with some unknown factors forced Wauchope's resignation, though Acorn spokesman Kevin Coleman denied that the German operation or the education channel changes were to blame.

Wauchope may well be remembered by Acorn fans scaling the heights of an artificial climbing face at the 1993 Acorn World show. I'll remember him for his unstinting performance during the Risc PC launch showing a level of dedication by a computer company managing director I've certainly not seen in 11 years of computer journalism. The launch was in a hotel basement in London's West End last year, and for two days Wauchope and his staff performed an elaborate and gruelling Risc PC presentation over and over again to dealers, developers, the press and the public. It will be a long time before you'll see a managing director show that level of dedication. But then again, David Lee might surprise us all.

Credit scheme

The first of Acorn's promised lines of support to boost all the non-education dealers has been unveiled. It's an interest-free credit scheme called 20:20.

The idea is that you pay a 20 per cent deposit for your Acorn purchase and the balance is paid over 20 months. In fact, you can pay a lower percentage deposit in some cases, but the minimum loan balance is £700 and the maximum £1484.95. Larger purchases will require deposits higher than 20 per cent and smaller purchases will fall outside the scheme.

Initial dealer reaction for the scheme is favourable, with many dealers advertising the scheme, though more support for non-education agent dealers from Acorn in other forms is still expected.

Tornado hits Acorn

Let's face it, there are plenty who feel Acorn has failed to add excitingly significant new features to RISC OS since its introduction in the late 1980s. One such person is Niall Douglas, who has proposed to independently produce a RISC OS alternative, called *Tornado*, to exploit Acorn hardware better.

Tornado will be resource-frugal, have virtual memory support, include multiple level multitasking, and application developers won't be bogged down having to write routines to manage routine functions like window management, etc. Of course, Niall Douglas is unknown to many, but *Acorn User* has seen his proposals and they look interesting. If you're interested in seeing them too, e-mail Niall at ndouglas@digibank.demon.co.uk

Acorn User diary

Date	Event	Venue	Contact
9 Sept	ARM Club open day	Leicester High School for girls	The ARM Club: 0171-624 9918
14 Sept	SARC Bring & Bash (bring your computer and demonstrate your favourite program)	Ipswich Central library	Suffolk Acorn RISC Club (SARC) tel: (01473) 728943, fax: (01473) 270643, e-mail: sarc@octopus.anglianet.co.uk
23 Sept	Dutch Acorn Computer User Society open day	Community Centre, Tesselscadelan 1, Harderwijk, The Netherlands	The Big Ben Club, PO Box 1189, 6801 BD Arnhem, The Netherlands, modem: +31 20-663 1849, fax: +31 70-366 3193
23 Sept	SARC Barbecue	Felixtowe	SARC (details above)
27 – 28 Sept	SEMERC 9th national Micros for Special Needs exhibition	Queen Elizabeth Hall, Oldham	SEMERC tel: 0161-627 4469, fax 0161-627 2381
11 Oct	Colton software demonstration for SARC	Ipswich Central Library	SARC (details above)
27 – 29 Oct	Acorn World '95	Wembley Exhibition Hall 1	Ticket hotline: (01933) 441448
19 Nov	Kegworth computer show	Kegworth Hotel	Selective Computer Services, tel/fax: (01332) 690691
10 – 13 Jan	BETT '95	National Hall, Olympia	Ticket hotline: 0181-984 7711

Colton Software and Protechnic combine

The late Mark Colton, founder of Colton Software – responsible for Acorn platform software titles like *Pipedream, Wordz, Resultz, Fireworkz*, etc. – briefly saw one particular career wheel turn full circle. Just before his untimely death, Mark Colton announced that Colton Software was to merge with fellow-Cambridge company Protechnic Computers Ltd. Mark originally worked at Protechnic in the early 1980s writing BBC Micro software for Acorn, like the *View* word processor, *ViewStore* database and *View Professional* hybrid word processor and spreadsheet. *View Professional* ultimately proved to be the inspiration behind *Pipedream* for the Sinclair-designed Z88, PC DOS and of course the Acorn Archimedes.

Today, Protechnic is responsible for a Unix-based Community Health System, called PHC, which is used by 30 NHS Trust sites. Protechnic has an associated company called *Keysoft*, which develops object oriented programming tools in the Smalltalk language. The Colton/Protechnic merger will not affect the day to day running of Colton Software or the support of all existing Acorn titles and customers.

Colton Software
Tel: (01223) 311881

Squirrel out of hibernation

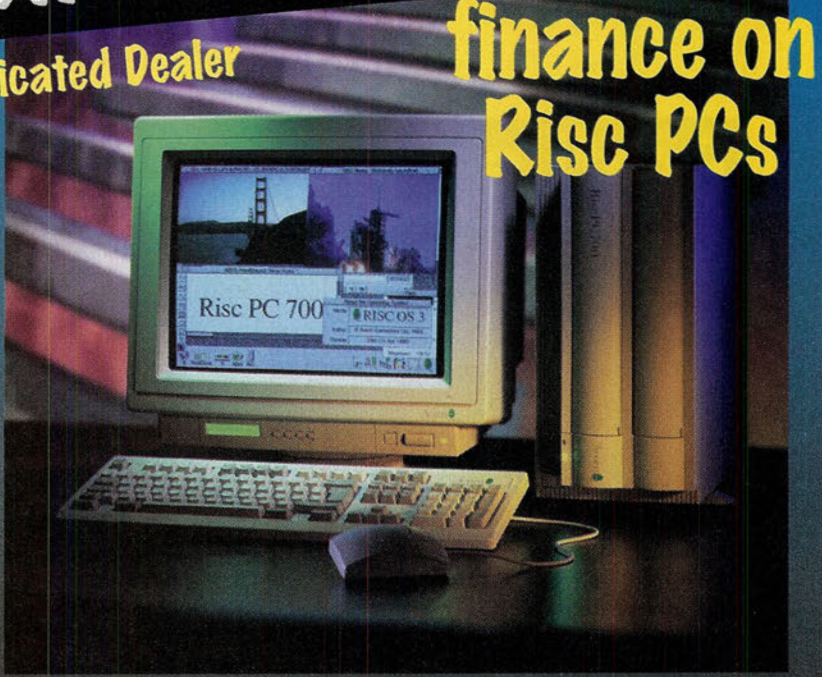
As hoped and expected, the Acorn software products developed by failed Digital Services have been saved and will continue to be sold, developed and supported. The news came from Frances Bastable, a former Digital employee, who has acquired the former Digital titles *Squirrel, Armlock, Netgain, Waiter* and *Digistore*. Frances' son Ian has been retained as technical developer. The software will be marketed and supported by a new company called DSL Supplies.

DSL Supplies
Address: St. Margaret's Lane, Fareham, Hants PO14 4BQ
Tel/fax: (01329) 841600

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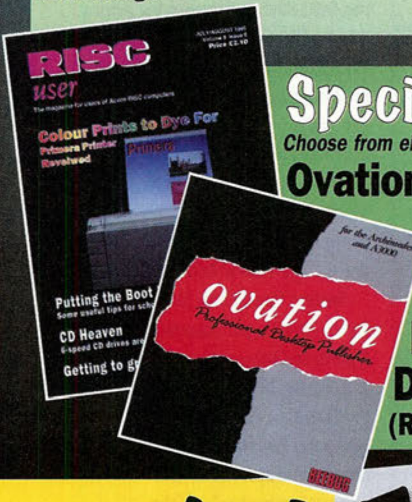
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A3010 with optional monitor

A3010 Specification

The A3010 is supplied with 1Mb RAM (upgradable to 4Mb), RISC OS 3.1, mouse, stereo sound, two joystick interfaces and can be used with either a TV or monitor. It includes Edit, Paint, Draw, and Maestro music programs along with the game Zool and wordprocessor StartWrite. The system has a single expansion slot for hard drive or scanner etc., serial port and a bi-directional printer port.

Monitors & Upgrades	
1-2Mb RAM	£35
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AKF52 Monitor	£170
AKF50 Monitor	£245

Upgrades

We can offer a number of upgrades at reduced prices and fitted free when purchased with a system. For example a 2Mb A3010 with monitor would cost just £340. These systems are ideal for home and educational use and offer a very similar specification to the A3020, as used in most schools throughout the country.

Software Packs

The following packs are available when buying an A3010.

Learning Curve	Advance, PC Emulator/DOS 6	£42
Home Office	Easiwriter, Datapower, Pipedream 4, PC Emulator/DOS 6	£80
Early Years	Talking StartWrite, Flossy The Frog, Mouse In Holland, Doris the Dotty Dog, Amazing Maths	£42
Home Professional	Ovation DTP, Pipedream 3, Atelier, Type Studio, Chartwell, Chess	£35

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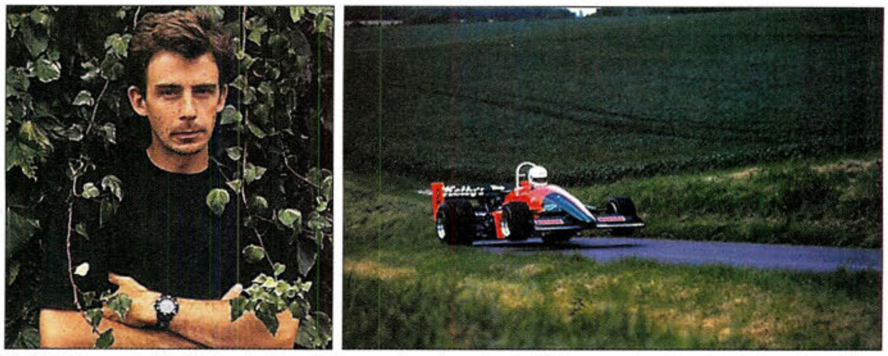
Software pioneer Mark Colton is killed in motorsport tragedy

IT HAS been a bad month for the Acorn community. Acorn dealers are still reeling from the much discussed education channel changes, Acorn itself lost its managing director, and one of the key figures in Acorn history, Mark Colton, died in a freak accident at a motorsport event in Northern Ireland. Mark's list of achievements in the Acorn scene are many. He was primarily responsible for developing Acorn's *View* family of word processor, spreadsheet and database packages for the BBC Micro. These later evolved in to *View Professional*, a version of which was adapted for Sir Clive Sinclair's Cambridge Z88 portable computer in the guise of *PipeDream*. When Acorn's brave new Archimedes was launched in 1987, *PipeDream* was one of the first native applications to run on the new RISC platform. Today, Colton Software is best known for the *Wordz*, *Resultz*, *Recordz* and *Fireworkz* integrated software packages.

Mark died at the wheel of his Pilbeam hillclimb racing car, the accident almost certainly caused by the failure of a front wing, causing loss of control and a head-on collision with a telegraph pole at well over 100mph. Ironically, Mark was the first to die in his chosen branch of motorsport since the 1960s. As Nigel Mansell would have put it, Mark Colton wasn't racing just to make the numbers up and he was narrowly beaten into second place in the national championship last year. Some moving tributes have already been published in the motorsport press.

Colton's rivals in the software business have also been paying tribute. Founder of chief rival, Computer Concepts, Charles Moir, had known Mark Colton longer than most: 'He went to school with me, was one of the early pioneer software developers and was our main "competitor" throughout the '80s, although I always got on well with him. More recently, like ourselves, he's been struggling to convert to the Windows platform. He was one of only a handful of people in this country who could and did develop decent, competitive, mainstream applications.'

Colton Software's Adrienne Sharman has informed *Acorn User* that, despite the tragedy, the company will continue to trade normally. Carol Atack, former news editor on *Acorn User*, has known Mark Colton for many years – indeed, she has been responsible for much of the documentation supplied with Colton software. Her personal tribute to Mark appears here.



Mark Colton outside his Cambridge offices and at the wheel of his car at the May RAC championships.

Obituary

The tragic death of Mark Colton has robbed the Acorn world of one of its key figures. Mark, 34, was killed on 5 August when his racing car left the track at speed during a practice session at Craigantlet in Northern Ireland, while he was preparing for the 12th round of the RAC hill-climbing championships.

Mark packed an astonishing amount of achievement into his years. Like his school friend and long-term business rival Charles Moir of Computer Concepts, he began with software for the BBC Micro. His word processor *View* was such a success that it was built into the BBC Master.

Mark's philosophy was that software should be easy to use, that there should not be distinctions between different types of program, that you shouldn't have to close your word processor and load a spreadsheet just because you needed to add up a few numbers. After adding a full range of programs to the *View* family, he turned to making each element work together. Hence the integrated programs *View Professional*, *PipeDream* and *Fireworkz*.

PipeDream was first included in the Z88 portable as its built-in software. The program got its name when Mark's father dismissed his plans for the product as an unachievable pipe dream. The next version was for the PC: only with version 3, released in 1988, did it come to the Archimedes where it found its greatest success.

What few people in the Acorn world realised was that Colton Software wasn't all Mark did. For example, admirers of his office hi-fi were rarely told that he'd worked on its internal software. His great ambition was to win the hill-climbing championship – last year he was runner-up.

Mark was also a fitness fanatic, enjoying running, cycling, skiing and other sporting activities. His energy was such that he put more into each of his activities than many people could into just one of them. This exuberance and vitality make his death all the harder to bear.

It was (often literally) hard to keep up with Mark. He didn't suffer fools gladly. If you disagreed with his vision you had to be ready to argue your point. But his legendary dry sense of humour, loyalty and charm endeared him to his team. 'I see you use the deep-litter filing system,' he once said on entering an untidy office. His wit was often used to express intelligent, thoughtful insights, or to puncture pomposity in marketing people.

Many more people in the Acorn world got to know Mark lately as he played a more public role. His natural urge was to shy from publicity but he overcame this to promote his products, and also to play his role in the Acorn developer community where many valued his hard-hitting criticisms of Acorn's shortcomings.

Mark touched many people's lives and his loss will hurt many people. Deepest sympathy to his family and friends and particularly to his parents, girlfriend Nicola Bradley, and the team at Colton Software and Protechnic, who plan to continue his work.

Carol Atack

Gliding over the ALPS

COMPUTER mice and tracker balls each have their problems – some people can't get on with one or the other and they are prone to unreliability when parts of their mechanisms get dirty. Eventually, they can wear out too. In the past, people have experimented with touch pads as mouse alternatives. Examples include the Psion MC mobile computer and various Olivetti notebooks from a few years back. In fact, the Olivetti notebook case adopted by Acorn for the A4 Portable incorporated a touch pad, but Acorn declined to use it.

Those early touch pad devices weren't the most sensitive, but improved technology has seen the touchpad make a come-back in the form of the GlidePoint, a compact touch pad, versions of which are already being incorporated into several manufacturers' new notebook PC designs. The ALPS GlidePoint is just 80mm square and, after calibration, represents screen area. To guide the 'mouse' pointer around you simply apply the tip of a finger to the pad. To click on an icon or button, you simply tap the pad gently.

A GlidePoint should be long-lived as it has no mechanical parts. The new A7000 has an industry-standard IBM PS/2 mouse connector, but if you want to use the GlidePoint on a Risc PC you will need to use the serial port. It may be possible to use the GlidePoint with older Acorns with the necessary serial port driver software – the golden rule is to check it works first. ALPS GlidePoint 'mice' are available from various PC accessory outlets.

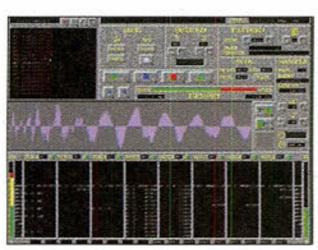


At last, a mouse you can stroke . . .

16-bit sound tracker – Xenakis16

NOW that standardised 16-bit sound is becoming generally available, Acorn users need a 16-bit sound tracker. Dexedream Productions says it has the first such commercial product in the form of *Xenakis16*, which can be used with Acorn and Minnie 16-bit sound cards.

Xenakis16 features: 8 or 16-bit playback, 4 or 8 channel modes, and 256 instruments per song. Effects include visual loop editing VU meters, timer and memory monitor, and there is support for the *Coco* format. *Xenakis16* is priced competitively at £19.95 + £1.50 P&P. A demo version is also available. In the Autumn, Dexedream will launch *XenakisPro*. Unlike *Xenakis16, XenakisPro* is fully RISC OS compliant. It will feature up to 16 voices in 16-bit mode, an extensive sample editing suite including cut-and-paste facilities, automatic 8-/16-bit conversion, effect generation and interpolated oversampling and also undersampling.



A new soundtracker to take advantage of 16-bit sound, *Xenakis16* runs outside the Desktop. A RISC OS-compliant version is in the pipeline.

Full compatibilty with proposed SoundDMA enhancements is promised, allowing multiple applications to utilise the sound system. Output to SCSI DAT devices for professional quality sound mastering will also be provided. There will also be pseudo-intelligent pattern generation for bridges and segues.

Dexedream Productions
Address: 12 Alne Terrace York
YO1 5AW
Tel: (01904) 625212

Beebug brings A3010 price down to £135

THE bargain of the century? The A3010 has always enjoyed some kudos as the most affordable RISC-based computer of all time. It's now one third of its original price at just £135 inc VAT from Beebug, who has bought Acorn's entire remaining inventory. A whole range of accessories and peripherals for the A3010 is available, including Beebug's excellent value-added packs.

Beebug
Tel: (01727) 840303
Fax: (01727) 860263



The A3010 forms the centre of Beebug's Home Professional system and is now cheaper than ever.

Where to Look for disc recovery

Look Systems has been repairing broken disc data since 1991 through its *Archimedes Disc Rescue* software. Not everyone may know that, of course, so what better way to spread the word than to offer a free disc repair and data recovery helpline and a no fix, no fee data recovery service? This means whether or not you are already a Look Systems customer, you can call it for free advice on how to recover lost disc data.

If the damage is serious, Look Systems can work to recover the data for you and will only charge you if it is successful.

Look Systems
Tel: (01603) 748253
Fax: (01603) 740203

ImageFS bargain

Alternative Publishing recently announced a bargain price on its acclaimed graphics import/export utility *ImageFS*. This is now available direct from Alternative Publishing for the price of £24.95 + VAT, a reduction of £10.

Alternative Publishing
Tel: 0141-248 2322

Another SchoolServer alternative

Another Microsoft NT Server-based PC for schools networking has surfaced, following in the wake of Acorn's own SchoolServer offering. This one is from @theNET, a specialist in Internet services. Its School NET Solution is based on a Pentium 75 PC, 16Mb RAM, 1Gb IDE HD, quad speed CD-ROM drive, 3.5in floppy disc, Windows NT 3.5xx and free technical support. 2Gb, 4.2Gb and 9Gb HD versions are also available. Acorn's *OmniClient* software is supplied as part of the package. For more information and pricing, contact Stuart Longbottom, @theNET, Tel: 0113-230 2992 or e-mail: info@atthenet.co.uk

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Sleuth 2

Optical Character Recognition

Sleuth 2 is a truly professional OCR system with superb features like auto page zoning, style recognition, fully integrated spelling checker and guided editing. Sleuth converts scanned images of printed material into ASCII files and can handle virtually all popular fonts in a wide range of styles achieving over 99% accuracy on good quality images. You will need 4Mb Ram and an Acorn-compatible scanner with a minimum resolution of 300 dpi. Sleuth can scan images directly using Twain drivers, which are available separately.

***SLEUTH 2 Price £99** + £1.70 Carriage*





Masterfile

General Purpose Database

Masterfile is a fast and flexible general purpose database providing powerful data management facilities suitable for business, education and home.

Masterfile is probably the easiest Acorn database package to setup and use!

Its many features include a comprehensive indexing system, subsets which limit access to just those records which match search criteria, and a report generator which allows databases to be printed in a variety of card, spreadsheet or label formats.

***MASTERFILE Price £49** + £1.70 Carriage*

Easy C++

C++ Development System

Easy C++ is an excellent implementation of the in-vogue object oriented programming language C++. This implementation conforms to the latest Stroustrup text and supports both Templates and Exceptions. Unlike some other implementations, Easy C++ is not a C++ to C translator but compiles C++ source directly to ARM code making it quick and easy to use.

Easy C++ uses the much praised Easy C WIMP interface which allows programs to be compiled, linked and run at the click of a button. The package includes ANSI C and IOStream libraries, Make facility, integrated ARM assembler, source level debugger and also supports Throwback.

The original highly acclaimed Easy C package is also still available.

***EASY C++ Price £99** + £2.70 Carriage*

***EASY C Price £59** + £2.70 Carriage*



TypeStudio

Flexible Font Effects

TypeStudio is the best selling font effects package that allows outline fonts to be manipulated to produce professional quality posters, banners, logos, letterheads etc. — the possibilities are endless.

Text may be flowed along straight or curved paths, or moulded into almost any shape. A wide range of interesting effects may then be applied to enhance the design further. These include: wall, floor and graduated shadow, 3D text, mirror, plinth, slant. You can use all of these effects on Draw files too! TypeStudio is intuitive to use, and unlike some other packages, paths and moulds may be created and edited using the drawing tools provided, so you can do all your design work using just the one package.

***TYPESTUDIO Price £29** + £1.70 Carriage*

Hearsay

Advanced Communications

Hearsay is the definitive general purpose communications package for Acorn systems, designed for easy communications for the first time user, but with advanced features making it also the professionals choice.

Hearsay provides high quality VT terminal emulations, and is ideal for use with Prestel, Campus 2000, Compuserve and virtually all bulletin board systems. Other features include: background file transfer, number directory, script language and support for popular modems.

***HEARSAY Price £75** + £2.70 Carriage*





Hard Disc Companion

Reliable Hard Disc Backup

Hard Disc Companion is the acclaimed package that provides a structured system for backing up hard drives to floppy discs and other devices.

It supports Full and Incremental backups with data compression. Files to be backed-up or ignored are chosen using simple drag operations. The backup specification may be saved in a script file for use at a later date.

In the event of disc failure or accidental file deletion, files may be retrieved using simple drag operations.

***COMPANION Price £45** + £1.70 Carriage*

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Studio24



This picture is original artwork produced using Studio24 by Walter Briggs of Kingfisher Graphics

A demo version of this package is available together with many example pictures and a complete copy of the manual. Price £5.87 inc vat (Refundable against purchase of the full package)

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Please see our other advert for details of computer prices.
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A4 Colour Scanners



New from Pineapple the superb IX-4015 A4 flatbed Canon colour scanner. Supplied with Imagemaster and Twain software this scanner makes the perfect companion for our Studio24 re-touching software. With a basic resolution of 400 x 800 dpi this scanner is unbeatable value.

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Pineapple Software

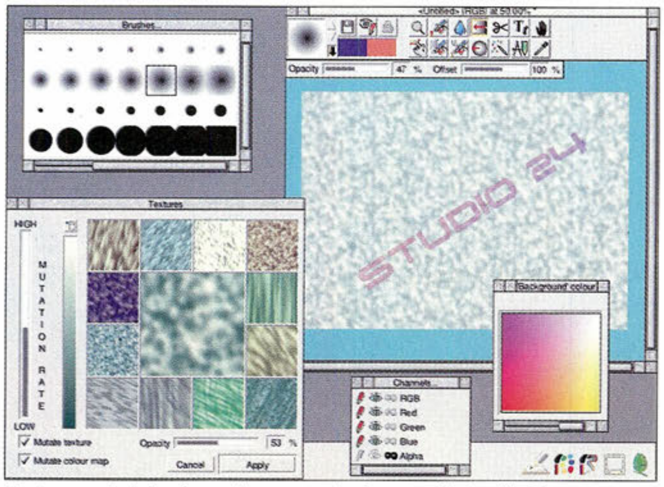
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Graphics

Next generation bitmap package arrives



Textures and alpha channels come to the Acorn with *Studio 24.*

STUDIO 24 started out life as a lone coder's program which stood as one of the first true 24-bit bitmap applications on the Acorn. However, it has been slightly overshadowed by products like the now defunct *DA's Picture* and the highly capable *Photodesk.*

Now officially in its second version, *Studio 24* cannot be recognised from its original form except for the application icon. Besides having professional features such as indefinite Alpha channels and multiple full-colour channels, wide-ranging scanner support and colour-calibrated CMYK support for professional outputting, *Studio24* is completely compatible with every Acorn machine, unlike some packages that require a Risc PC. So whether you have an A5000, A4000, or even an A3000 series machine, you have the potential to enjoy the many powerful features such as the fast virtual memory, error-diffused screen displays, multi-channel 8-bit masking and brilliant *Draw* file and text support.

One of the most outstanding features of *Studio24* version 2 is the range of effects and filters which can all be previewed in a panable window *à la* Adobe *Photoshop.* These do not have such an easy brush-on, brush-off implementation as in *Photodesk,* but the effects allow the creation of adventurous and impressive compositions.

The package retails at £120, which now represents unquestionably good value for money, especially as this includes a feature which alone could retail for half that amount. I am here talking about the *Studio24* texture generator which uses fractal, plasma and geometrical shape algorithms through special colour-mapping routines to generate non-repeating textures which are very quick to create and stunning to look at. These textures can be saved and edited as small plain-English text files and therefore stored with tiny memory consumption, even though the images they generate can be massive, complex bitmaps of limitless size.

Studio24 comes beautifully packaged with a good manual and a powerful *ClearView* interactive help system with loads of colour graphics. When its main rival arrives – *Photodesk* version 2 – the package will be reviewed in full.

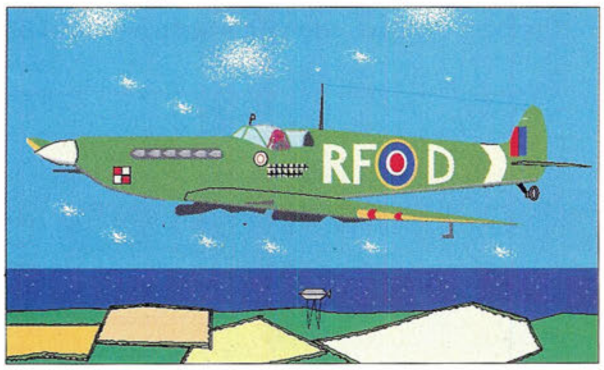
Pineapple Software
Tel: 0181-599 1476
Fax: 0181-598 2343

Pic of the month

DAVID HUNT is this month's winner; they keep getting younger and younger. David is 11-years old, and created the image by first drawing the sky and the sea, then moving on to *Paint* to spray the clouds. The rest of the picture was created in *Draw* by drawing the basic shapes and then colouring them in.

The amazing level of detail (which is impossible to reproduce in the magazine) made the file come to over 900K in size, with the hedges, the pilot, the exhaust and all the cleverly incorporated bitmap elements. £20 is the winning prize, and remember that all winners can write in to the Digital Darkroom at: PO Box 550, Belvedere, Kent DA17 5SL, tel: 0181-311 2001 and a free colour slide of the winning picture will be theirs.

All Acorn users receive special rates from the Digital Darkroom for this high-end service.



Driving too fast

Calligraph, the Cambridge-based company specialising in direct-drive laser printing technology, recently announced the release of a Level II PostScript RIP for Acorn computers in conjunction with PostScript specialists Rapport.

The advantages of a computer-driven system are firstly that the rastering process is dependant upon the computer's CPU, so when you upgrade your processor you up your printing speed, and secondly, increasing the RAM in your machine improves the buffering and image rendering performance.

Calligraph's A4-1200 and TQ-1200 printer drivers are now very mature and capable,with lightening-fast rendering of graphics and of bitmaps on a RAM-packed Risc PC. They also boast very useful background printing and spooling for networks.

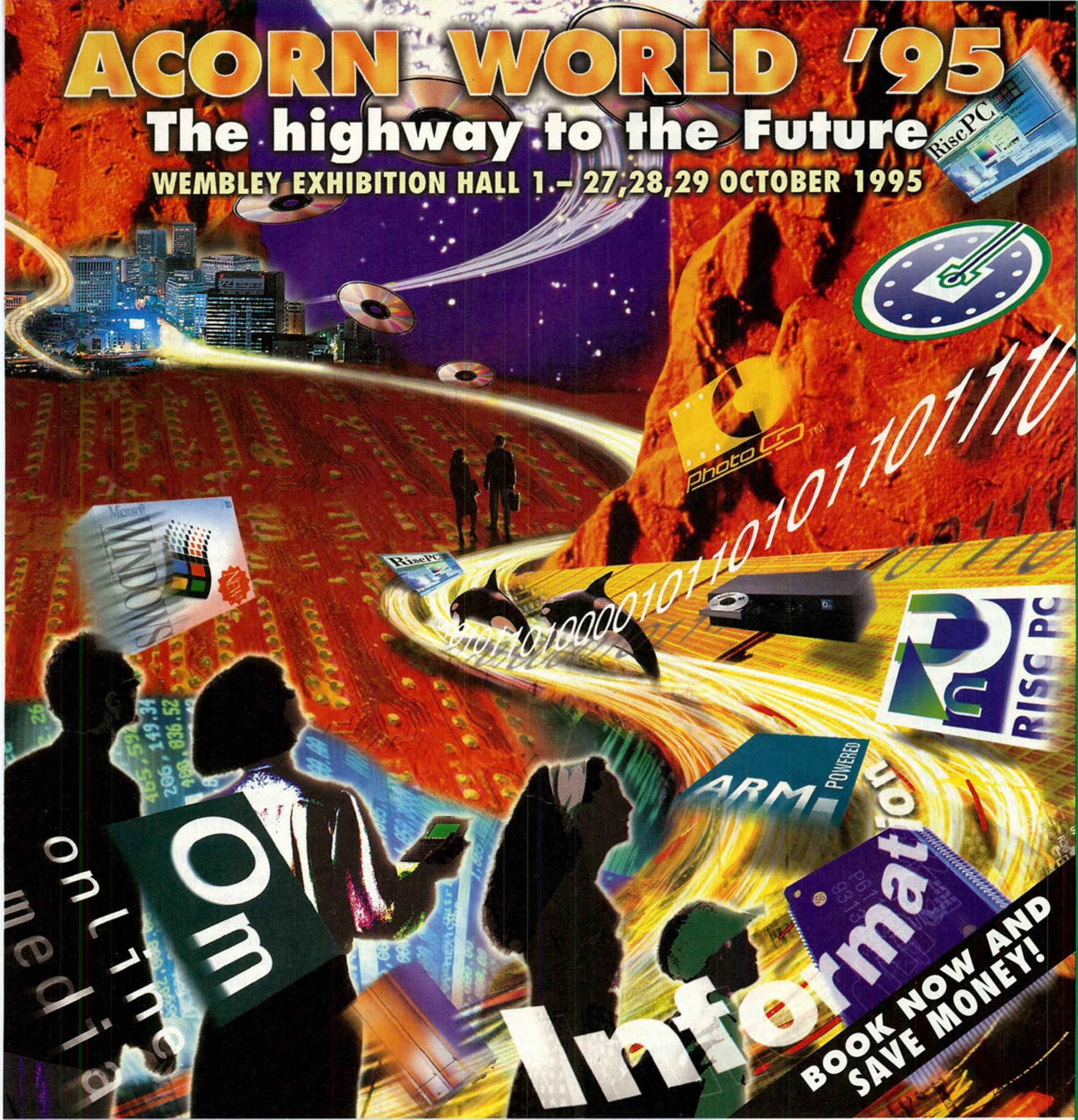
I also wish Richard Piller – who will remain the technical brains behind Calligraph – all the happiness in his move abroad.

JPEG on RISC OS 3.6

Those coding wizards on the second floor have done it again and banged out another truly amazing little bit of software – the fastest JPEG decompression I have seen on any computer without dedicated hardware. Your usual five-second wait can no longer be timed in seconds, as it seems that the moment you loft your finger off the mouse, the image has already decompressed into a 32-bit sprite. Real time compression and decompression in software will surely follow – *Draw* will already display JPEGs in real time – and perhaps there will be MJPEG interactive communication and playback facilities as standard in future, more powerful Acorn machines.

Contacting me

You can contact the Graphics page by writing to me, Jack Kreindler, as *Acorn User,* IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: jack@acornusr.demon.co.uk.



Log on, hook up or plug into the Information Superhighway. Whichever way you want to enter this new world, Acorn World '95 promises to be the best event of the year. Come and get real, hands-on experience of all the latest desktop products. Learn from the experts at the live theatre presentations. See the revolution in home services being created by Acorn's "Set-Top Box" technology. Plus jugglers, face painting, a games arcade, competitions with prizes. A FREE crèche and over 100 exhibitors showing what's new and exciting in the world of IT.

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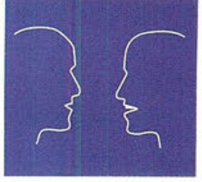
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Acorn

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Comms

Saturn hits Manchester

ANDY Jones doesn't like Eccles cakes. Fortunately, this fact doesn't affect the operation of Andy's new Saturn BBS which is located in Eccles, Manchester, where the cakes actually come from. Saturn is one of the new breed of bulletin boards running *ArmBBS* software. The heart of the system is an Acorn A3000 machine fitted with 4Mb RAM and a 500Mb hard disc. The BBS phone line connects to a Psion Dacom 14,400bps fax modem.

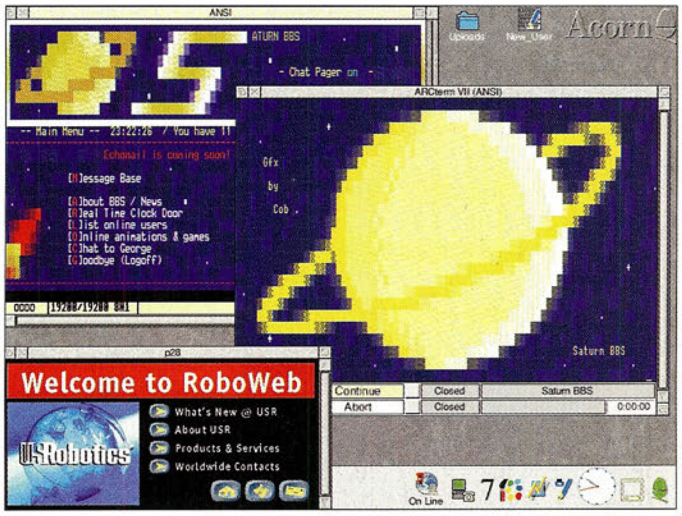
Andy has been busy writing 'doors' for the BBS – external programs that add functions not already provided by the BBS software – such as his real-time *Clock Door,* which shows the day, date and a continuously-updated large-character digital time display. I called at 14400bps and the digits seemed to change about once a second, which seemed about right.

There are some splendid ANSI graphics screens mostly designed by the enigmatic 'Cob', whose work is much in evidence on many of the Acorn-interest BBSs. All the Saturn menus have ANSI graphic backgrounds on a cosmic communications theme, but for users of slower modems, a useful option allows much simpler faster screens to be sent instead.

Andy's eight-way multi-user chat 'door' which he's ruefully called *Virtual Confusion* features prominently, and although Saturn BBS only has one phone line at present, suitably confusing demonstration chats with seven different Andys are possible. This door program is being usefully beta-tested on other BBSs that do have more phone lines, so you may come across it elsewhere.

Saturn BBS has the usual Acorn-interest message and file areas, and Echomail conferences are being added to these. Users who are prepared to answer the new user questionnaire receive higher access levels, and full access is given to registered users.

Even if you've never tasted Eccles cakes, you can get the flavour of Saturn BBS by calling 0161-707 9306, and it's online 24 hours a day.



Another BBS, another planet – Saturn BBS has started up in Eccles, near Manchester.

Hinderers and helpers

AS with any community group, all kinds of people inhabit the BBS world, from dedicated enthusiasts to dedicated hackers. One aspect of BBSing that often goes unguarded is that of password security. It's so easy to log on to several different new BBSs, using the same password on each system for convenience – I've done it myself.

While most responsible Sysops are keen to offer a reliable, friendly and safe service, with more Shareware and Freeware BBS software packages becoming available there is a possibility that your password could become known to the wrong person, who could be tempted to try that password on another BBS in your name.

Fortunately, simple precautions can prevent this. BBS software writers must ensure that their password encryption routines are one-way, so the password is encoded each time it's entered, and even if the encryption routine has been hacked the data cannot reveal the original password.

If your terminal software has a 'script learn' facility, you can save a record of what you type during your login, and either use this directly for subsequent logins, or to create a terminal logon sequence that enters the password that you randomly chose at your first call, so you neither need to remember it, nor use the same password each time.

Most BBS users, however, are glad to help others, and there is a huge amount of talent and expertise on the Acorn BBS scene. 'ProjectBase' has been set up on the Digital Databank BBS to pour this cornucopia of knowledge into an organised area where people can help each other. Users requests for help from others are displayed on a regular basis in the 'ProjectBase' area, and anyone interested can mail them for more information. The Digital Databank BBS is on (01707) 323531/300 – 14,400bps, 24 hours.

ANT Suite released

I have just received a beta-release copy of this long-awaited Internet access package, and I'll give you a full report and review soon. The *ANT Internet Suite* costs £99 + VAT.

ANT Ltd
Address: PO Box 300, Cambridgeshire CB1 2EG
Tel: (01223) 567808
Fax: (01223) 567801
E-mail: info@ant.co.uk
WWW: http://www.ant.co.uk/

The CyberHouse

David Cutting's CyberHouse BBS in Norwich is aimed at Acorn, IBM, Mac and UNIX users. Running *ARMbbs*, the system is online overnight 10pm – 10am weekdays, longer at weekends. David's Sportster accepts calls from 300 to 14,400bps with V42/V42bis. Internet news, e-mail and specially dedicated Music Module areas are planned and David is looking for co-system managers to help run the BBS.

The CyberHouse
Modem: (01603) 502645

RoboWeb

US Robotics' World Wide Web site, RoboWeb, holds a lot of useful information about USR Products. While mainly featuring US model specifications, you can find out about the Courier I-Modem, a V.34 modem with integrated ISDN terminal adapter, download the Courier V.34 Technical Reference manual (ftp://elroy.usr.com/pub/courier/1024172b.zip) in *MS Word* format, or re-flash your modem to Czechoslovakian Courier V.34 specs – not recommended!

RoboWeb
WWW: http://www.usr.com/

Contacting me

You can contact the Comms page by writing to David Dade, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

School year-book makeover

THIS month's lamb to the slaughter is produced for Egglescliffe School in Cleveland by its IT co-ordinator Mr Lockwood. I'm looking at the year-book which is produced using *Ovation*; the 50 or so A4 pages are printed onto high gloss paper with a stunning full-colour cover.

The year-book includes literally dozens of photos, as well as a fair smattering of news and creative writing. The pages are designed in a left/right format and, since the school has yet to get to grips with its new scanner, the pages fall into text-based and graphics-based groupings because of the need to cut and paste photos (physically, with a scalpel and glue). I've selected a page that's pretty text-heavy to use for the makeover. It uses just two conventional fonts – nothing wrong with that – Homerton and Trinity. I stuck with Trinity as the body font but switched to Gill Sans for the headlines as it's an old favourite of mine. The articles and features are all well-written and most are fairly short since there are three to a page. Since a fairly large type size is used for the body copy (14pt Trinity) each page only has about 600 words on it. I crammed about 700 on by reducing the font size to 10pt but even at 12pt you'd get 600-650 comfortably.



Trips and Visits

Shakespeare & Biology at the Theatre.

Various theatre trips have been organised throughout the past school year for all year groups in many subject areas. In March, three Year 7 Science groups went to see an educational production entitled 'Body Talk' about the bodily functions of an eleven year old. This fitted in with their Science work.

In the Autumn Term all Year 11 pupils watched a play, sponsored by Teesside Training and Enterprise Council, put on by a local theatre group about the opportunities offered to young people leaving school in the region. The play was very amusing and presented information in a fun identifiable way. It dealt with problems faced and obstacles which have to be faced, as well as presenting training opportunities and the Choices card.

The English department have organised theatre trips and even an in-school play. This was a presentation of 'The Rime of the Ancient Mariner' by Samuel Taylor Coleridge, which many Year 11 English Literature groups are studying for GCSE. Cleveland Theatre Group performed their interpretation of the poem with superb visual and audio effects, in a quadrangle surrounded by the audience. Two visits to Newcastle Theatre Royal to see 'Twelfth Night' and a very interesting interpretation of 'A Midsummer's Night Dream' in the Royal Shakespeare Company's Newcastle Season. Students in Year 11 and Sixth Form attended these excellent productions.

Lucy Brown 11KG

The Magic of Chemistry

On Comic Relief day, Friday 17 March, some pupils from the 10 D1 science group went to a chemistry lecture at Captain Cooks museum, Stewarts Park.

The lecture itself lasted about three hours in which we learned about Polymers, Monomers, Nylons and those funny liquid filled straws that glow in the dark. Also included in the lecture was some history about the people who invented the above things.

The lecture ended with the lecturer dropping a lit splint into a long glass cylinder filled with gases. It made a sort of screeching-whooping sound and various coloured lights appeared. As we left we were given stickers with things like 'Chemists find solutions' on them.

A few days later in Chemistry with Mrs Carr Joe got up suddenly, walked over to Mrs Carr and gave her a great big cuddle! His stickers had 'Cuddle a Chemist and feel the reaction' written on it. I dread to think what would have happened if he had had the 'Experiment with a Chemist' sticker.

Geoff Snowdon 10RS

"Mastering maths"

For five weeks, between 21st January and 1st April, 8 students in year 8 (Chloe Harmer, Jennifer Reynolds, Peter Richards, Christopher Balmer, Michael Dalton, Daniel Dickson, Charles Tait and me) were invited to the Cleveland maths masterclasses taking place at Hartlepool Power station.

The classes covered a wide range of mathematical subjects such as maths using computers.

Each week covered a different investigation led by a different expert in that particular field who was invited by the organisers.

At the end of each session we were given a maths problem to do at home and prizes were given for the best answers.

Despite the fact that Maths has a rather grey and dull image when you get into it you find a huge (dare I say infinite!) number of interesting problems to consider.

As we rely on computers more so there are more and more mathematical problems arising which need people to solve them.

The course proved to be educational, interesting and fun.

Alison Gray 8GR

17

The headlines and authors' names blur into the body copy. The bottom article actually spans across the bottom two columns but the right-hand section looks, at first glance, like a continuation of the Chemistry feature running down the right-hand side of the page.

I reduced the paragraph spacing but increased the amount of white space on the page. I wanted to try something unconventional so opted for a seven column master page which contained only guide frames. The seven columns meant I could create three double-width columns, or two treble-width columns or a mixture.

This layout often meant that one of the seven was left empty and rather than putting this on the outside or inside edge, I moved it about between the features. This prevented the pages from looking repetitive, but since the underlying grid is the same the pages didn't look too different.

The empty space is useful for flowing graphics, captions and pull-quotes into. It can look a little sparse, but some form of school crest or logo could be inserted to add additional continuity to the pages. The main problem with the original pages was trying to figure out which columns of text belonged to which headings and where the copy went after it reached the bottom of a frame.

Each article had both a title and the author's name at the bottom, but these weren't quite bold enough. By making them heavier the start and end of an article became much easier to identify.

Steve Powell



The extra space helps distinguish the separate items. The heavy 6pt lines (a frame filled with black only 6pt tall) emphasise groups of columns which make up a single feature or article. The three-column-wide feature column in the bottom left corner helps prevent the page grid getting predictable.

Top tips

Headlines should always be prominent; they are supposed to grab your attention. Sans-serif fonts often make good headlines as they are easy to read when large and look nice and solid when bold.

A headline or subhead should always be closer to the paragraph it relates to than the one before it. This helps attach it more firmly to the correct text than a subhead that is equidistant between two paragraphs.

Putting white space (empty page) around a headline helps draw the eye towards it. This is true for just about anything, not just for headlines. However, too much white space leaves things looking like they've wandered away from the rest of the text.

Avoid letting your pages get boring and repetitive. Use headlines, sub-heads, pull-quotes and graphics to break up your columns. A slightly less balanced column grid can add tension to a page while still being flexible enough to accommodate both long and short articles.

Text runarounds or graphics that interrupt the text without breaking the flow help make your pages look more active.

Showroom open Mon-Sat 10-18.00 hrs **(All prices exclude VAT)** Carriage included except where indicated

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The following CD-ROM's are Multi-Session, PhotoCD, CD-DA, White Book compatible & include a cable & driver for CDFS 2.20

Internal Drives

4x Speed SCSI (Tray) XM-5301	£210
The above CD-ROM drive can be used in tower mode!	
4.4x Speed SCSI (Tray) DR-U124X	£240
PCW Verdict - 'It's extremely quick, and a bargain.'	
Cumana CD300i IDE (Tray)	£199

External CD-ROM Drives

2x Speed SCSI (Tray) 275ms	£199
4x Speed SCSI (Tray) 190ms	£280
4.4x Speed SCSI (Tray) 150ms	£320

SCSI cards

Morley uncached SCSI card	£130
Morley cached SCSI card	£169
Cumana SCSI II card	£169

Above are suitable for A300, A400, A3000 (Ext+£25), A540, A5000 and RiscPC.

Hard Discs

IDE Bare Drives		SCSI Bare Drives	
270Mb 12ms	£110	540Mb 12ms	£165
425Mb 12ms	£130	730Mb 11ms	£200
540Mb 12ms	£140	1.08Gb 12ms	£320

Above are 3½" bare drives only. Please add the relavent accessories from below. Drives are Connor or Quantum. ForA3000/A3010 hard discs see Hard Card section below.

Syquest Removable SCSI Drives

Internal Drives		External Drives	
EZ135Mb Syquest	£155	EZ135Mb Syquest	£189
(Above includes cartr.)			
105Mb Syquest	£150	105Mb Syquest	£210
270Mb Syquest	£259	270Mb Syquest	£329
Syquest Cartridges			
EZ135Mb Cartridge	£20	105Mb Cartridge	£43
		270Mb Cartridge	£49

Hard Disc Interfaces/Accessories

50-50C SCSI Cable	£10	25-50 SCSI Cable	£10
SCSI II-50 Cable	£25	SCSI Terminator	£10
5¼-3½ open adapt	£10	5¼-3½ HD adaptor	£12
IDE Accessories		**SCSI Interfaces**	
IDE interface	£79	Morley UnCached	£130
2nd Hard Drive Kit	£15	Morley Cached	£169
External case/PSU	£79	Cumana SCSI II	£169

TopicArt

Single disc clipart containing approx. 50 high quality draw format clip art images, each on a single subject. Comes with mono reference sheet. 12 subjects are available now. Please specify when ordering. Site licences are £16+VAT per disc, please ring for further details.

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Subjects available (one disc per subject)

1 General	11 Tools
2 Transport	12 AnimalsGB
3 Costumes	13 Chem Signs
4 Entertainment	14 Fire/Emerg Sn
5 Bugs 2 Slugs	15 Hazard Signs
6 Road Signs	16 Safety Signs
7 Sports Equip	17 Xmas1
8 Sports Figures	18 Xmas2
9 Dinosaurs	19 Xmas3
10 Symbols	20 Xmas4



New Machines

New Acorn Computers

All RiscPC's include 1yr on-site maintenance. **Low finance available, ring for details.** We operate Acorn Assist for teachers & academics. **For PC 486 Card add £99+VAT to following prices.**

Acorn A7000 (32MHz ARM7500)

Network or hard disc versions, podule slot, free SIMM skt

A7000 2MNET + AKF60	£892
A7000 2MHD425 + AKF60	£935
A7000 4MHD425 + AKF60	£1020
Add £111 to above for CD-ROM	

RiscPC600 (33MHz ARM610)

Hard disc, 2 podule slots, vacant SIMM & VRAM slots.

4MHD425 + AKF60	£1148
4MHD425 + AKF85	£1426

RiscPC700 (40MHz ARM710)

Hard disc, 2 podule slots, one free SIMM socket.

5MHD425 + AKF60	£1360
5MHD425 + AKF85	£1638
10MHD850 + AKF60	£1692
10MHD850 + AKF85	£1970

20/20 Finance

New

on Acorn Systems (0%APR)

20% deposit (min) and 20 interest free monthly payments. Available subject to status. Ring for details.

Limited loan value from £700-£1484 (max).

CD-ROM Drive Options

Acorn CD-ROM Drive (IDE)	£111
4x Speed SCSI (Tray)	£320
4.4x Speed SCSI (Tray)	£360

Above SCSI CD-ROM's include Morley uncached SCSI card, driver and cables. Add £39 for SCSI 2. Above prices only apply when purchased with an A7000 or RiscPC.

RiscPC Multimedia CD-ROM Pack

Includes 25W stereo speakers, Hutchin'ns Encyclopedia & The RiscDisc together with one of the following CD-ROM drives.

2X Speed IDE CD Pack	£280
4X Speed SCSI CD Pack	£390

The SCSI Pack includes a Morley Uncached SCSI Card. Add £40 extra for Cumana SCSI 2 Card.

Special Offers

(Whilst stocks last)

A3010 Action Pack with 1Mb RAM, StartWrite, Zool and other demos.

£175+VAT

A3010 Action, Zool Pack with 2Mb RAM, StartWrite and other demos.

£210+VAT

For AKF53 Monitor add

£200+VAT

Carriage £6+VAT for all above.

QuickTile v1.02 £25+VAT



Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. RiscPC compatible.

Requires RISCOS 3.10 or later.
Return Disc with SAE for upgrade.
Upgrade from Tiler for £15+VAT.

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A3010 Learning Curve 2Mb RAM	£325
A3010 Early Years 2Mb RAM	£325

Add £200 to A3010's for AKF53 Monitor.
Carriage £6+VAT on A3010 systems.

A3020/A4000 Series

A3020 2MFD/AKF53 MultiScan System	£509
A3020 2MFD/AKF50 MultiScan System	£549
A3020 2MHD80/AKF53 MultiScan Sys	£637
A3020 2MHD80/AKF50 MultiScan Sys	£677
A4000 2MHD210/AKF53 MultiScan Sys	£722
A4000 2MHD210/AKF50 MultiScan Sys	£762

Software Packs

Learning Curve Advance & PCSoft	£42
Early Years Talking StartWrite, Paint Pot	£42
Flossy the Frog, Mouse in Holland, etc.	
Home Office	£85
EasiWriter2, DataPower, Pipedream4, PCSoft	

The above packs are ONLY available with a computer system, (not including the A3010)

RiscPC Upgrades

PC486 Card	£99
(when purchased at same time as a RiscPC)	
MS-DOS 6.22 & Windows 3.11	£79
Microsoft Encarta '95	£50
16 bit Sound Card (Acorn)	£60
2nd Slice Case Upgrade (Carr. £6+VAT)	£99
Acorn Access+ for RiscPC	£99

Memory Upgrades

RiscPC 4Mb SIMM RAM	£110
RiscPC 8Mb SIMM RAM	£225
RiscPC 16Mb SIMM RAM	£359
RiscPC 32Mb SIMM RAM	£Call
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A3000 1-4Mb RAM	£129
A3010 1-2Mb RAM	£45
A3010 2-4Mb RAM	£105
A3010 1-4Mb RAM	£145
A3020/A4000 2-4Mb RAM	£89
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A300/400 Series 4-8Mb RAM	£249

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Acorn AKF53 14" 0.39dp MultiScan	£250
Acorn AKF50 14" 0.28dp MultiScan	£318
Acorn AKF60 14" 0.28dp MultiScan	£325
Acorn AKF85 17" 0.28dp MultiScan	£530
Certain computers will require an adaptor	£12

RiscOS 3.1 Upgrades

A300/A440 Series (inc carrier board)	£97.88
A400/1, A3000, A540 Series	£75.75
Bulk Pack of ten upgrades	£339.00
Please add £4 (Inc VAT) carriage to RiscOS	
RiscOS 3 Carrier board for A300/A440	£22

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Acorn A4 Portable	£1295		
Pocket Book II (256k)	£205		
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Pocket Book II (1Mb)	£285		
Psion 3a (256k)	£199	Psion 3a (512k)	£249
Psion 3a (1Mb)	£270	Psion 3a (2Mb)	£320
A-Link	£42	PC Link	£60
Parallel Link	£26	Mains Adaptor	£15
128k RAM SSD	£43	512k RAM SSD	£105
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486sx25MHz Bare PC Card	£329
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FPA Upgrade	£59
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Joystick Interface (all m/c's)	£28
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Scart - 15pin Monitor/RGBTV cable	£12
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TV Tuner with TeleText (CC)	£157
User/Midi Upgrade (A30x0/A4000)	£40

Modems

Sportster Modem Bundles

Modem bundles include a Sportster modem, cable, phone splitter, ArcTerm7 & ArcFAX.

14k4 Sportster Fax/Modem Bundle	£210
28k8 Sportster Fax/Modem Bundle	£265
28k8 Courier Fax/Modem & cable only	£345

Sportster Modems

14k4 Sportster Fax/Modem & cable only	£140
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28k8 Courier Fax/Modem & cable only	£270

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ScanLight Video 256 (A3000-A4000)	£205
Canon IX-4015 Colour SCSI Scanner	£609
Epson GT-8500 Colour SCSI Scanner	£525
Above includes !TWAIN/ImageMaster & Cable	
Vision24 Colour Digitiser	Int £69/Ext £94
Hi-Vision24 Digitiser A5000	Int £94/Ext £119

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A3010 HCCS Hard Disc Multi-Podule	
80Mb + User Port + 2 Slots	£185
160Mb + User Port + 2 Slots	£315
250Mb + User Port + 2 Slots	£475
A3000 Internal IDE Hardcards	
80Mb + User Port	£155
160Mb + User Port	£275
250Mb + User Port	£415

See also top of page for other hard discs
Please call for SCSI Hard Discs.

Printers (Include Cable)

Canon BJ-200EX (360dpi)	£200
Canon BJ-230 (360dpi)	£280
Canon BJC-600E Colour (360dpi)	£360
Canon BJC-4000 Colour (360dpi)	£250
Epson Stylus Colour Printer (720dpi)	£Call
HP LaserJet 4L 4ppm (300dpi)	£429
HP LaserJet 5P 4ppm (600dpi) **New!**	£639

Add £40 to above printers for TurboDriver

Printer Consumables

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BJ-200 Ink Cartridge (BC-02)	£18
BJ-300 Ink Cartridge (BJI-642)	£16
BJ-600 Black Cartridge (BJI-201bk HiCap)	£10
BJ-600 Colour Cartridge (BJI-201)	£8
BJC-4000 Black Cartridge (BCI-21Bk)	£9
BJC-4000 Colour Cartridge (BCI-21C)	£17
BJC-4000 Fast Black Cartridge (BC-20)	£28
BJ-800 Black Cartridge (BJI-643)	£16
BJ-800 Colour Cartridge (BJI-643)	£20
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EP-L Toner (LBP-4/HP LJIII)	£59
Epson Stylus Colour	Black £16/Colour £32
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JP-150 Ink Cartridge (Acorn)	£22
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Books (No VAT)

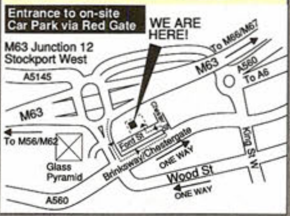
Acorn RISCOS3 PRM's **Add £7 carr.**	£99.95
Acorn 5th PRM covering RiscOS3.5	£29.95
Acorn BBC Basic VI Guide	£19.95
RiscPC Tech Ref Guide **Add £7 carr.**	£29.95
ArtWorks Made Easy (Dabs)	£14.95
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DTP on the Archimedes (Sigma)	£12.95
First steps in prog RiscOS (Sigma)	£14.95
Game Maker's Manual (Sigma)	£14.95

Add £2 Carr to above (£4 for Acorn books)

Terms

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Where to Find Us



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Childrens Micropedia CD	£85
ClipArt CD 1 (CC)	£19
ClipArt CD 2 (CC)	£19
Encarta '95 for Windows	£Call
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Hutchinsons Encycloped'	£47
Replay Starter Kit (Acorn)	£35
RiscDisc Vol 1 CD	£17
Simon the Sorcerer CD	£36

Applications

Advance 2Mb (Acorn)	£99
Advantage (Longman)	£46
ArcFax (David Pilling)	£28
ArcTerm7 (Serial Port)	£58
ArtWorks (CC)	£120
AudioWorks (CC)	£45
C/C++ (Acorn) **NEW!**	£199
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Chameleon 2 (4Mation)	£33
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Compression (CC)	£29
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Genesis Professional	£112
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Hearsay II (Beebug)	£75
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Image Outliner (IOTA)	£46
Impression Publisher	£120
Impression Publisher+	£259
Impression Style (CC)	£75
InterTalk (Acorn)	£78
MacFS (CC)	£76
MacFS Lite (CC)	£45
Magpie (Longman)	£50
MasterFile III (Beebug)	£45
Morpheus (Oregan)	£32
Night Sky (Clares)	£63
Notate (Longman)	£54
Ovation (Beebug)	£79
PenDown Plus (Long)	£67
Personal Accounts (Apr)	£38
PhotoDesk (Spacetech)	£157
PhotoTouch (Oregan)	£68
Pin Point Junior (Long)	£25
Plot (Clares)	£63
Poster (4Mation)	£74
ProArtisan 2 (Clares)	£102
Prophet (Apricote)	£145
Recordz (Colton)	£97
Render Bender v2 (Cla.)	£41
Rephorm (Oak)	£45
Replay Starter Kit (Acorn)	£37

Applics (Contd)

Resultz (Colton)	£75
Rhapsody (Clares) v2	£44
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S-Base 2 Developer	£98
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- Terramex & Revelation	
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Educational

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(Spec age group ,<5, 5-7, >7)	
Fun School 4	£17
(Spec age group ,<5, 5-7, >7)	
Granny's Garden (4M)	£23
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Maths Circus (4Mation)	£25
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Playdays (Gamesware)	£21
Rosie & Jim	
- Duck loses its Quack	£10
- Jim gets the sneezes	£10
Call for titles not listed	

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Public Domain

PickAPic galore

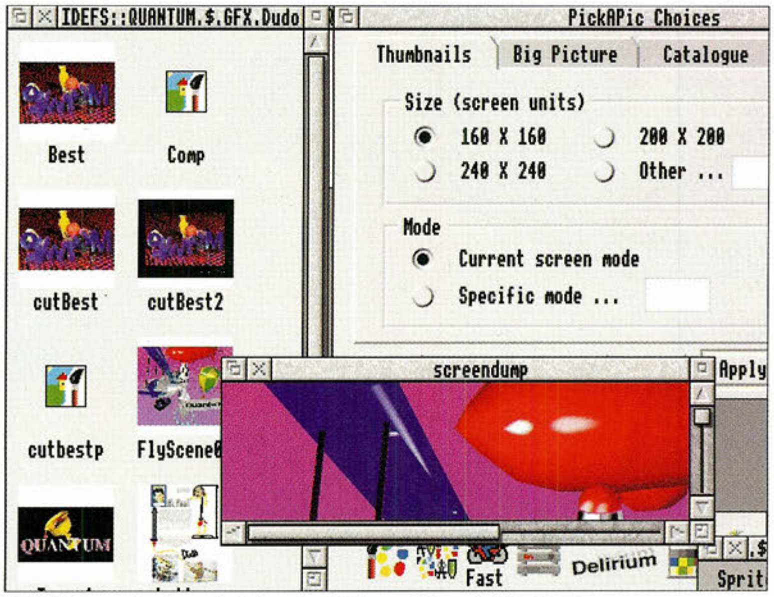
PickAPic by Hugh Eagle has featured in many lists of the most popular PD applications available, and a new update which brings the version number to 1.15a shows why. *PickAPic* allows the user to scan a directory and display thumbnail images of any graphics files found, making browsing and picture selection for DTP work simple and fast.

PickAPic supports sprites and *Draw* files as well as *Poster* and *ArtWorks* images. After scanning a directory, the window of thumbnail images produced by *PickAPic* can be clicked on, or dragged to another application.

This new release contains many improvements, topped off by the excellent thumbnail storage feature. Scanned thumbnails can be saved to a 'ThumStore' for quick access, which is great if you have loads of pictures on floppies. No longer do you have to scan through each disc every time you want an image. There are also significant improvements to the program interface, which now looks much more tidy, and rather sensibly, displays the file names under the thumbnail images.

Hugh plans to continue the development of the program with coverage of more graphics formats like JPEG, and the ability to search the text descriptions that can be added to ThumStore images. It would be great if Hugh could follow the lead of some PC applications designed as complete multimedia viewers. You could then scan a CD-ROM of pictures, sound and movies which would be viewed or played by *PickAPic* or other spawned applications.

PickAPic is a great program, made even better by this release. As well as being incredibly useful, it now has a rather stylish and professional feel – right from the lovely 'choices' window to the accompanying release notes which Hugh sent to me. Who says the PD world can't compete with commercial software? *PickAPic* is available from The Datafile and the Digital Databank BBS.



PickAPic's excellent user interface is a little reminiscent of *Photoshop.*

Blu demo utilises power of Risc PC

BLU is one of the first Risc PC-only demos and it makes quite an impact. It starts off with a few screens of text giving some background details about the demo and its coders, The Xperience, all done using anti-aliased fonts with a gentle tune playing in the background. This is a quiet start before the power of the VIDC20 and the ARM610 is unleashed, with swirling patterns of colour fading in to a weaved pattern which zooms, contorts and rotates at an incredible speed without a hint of flicker as a techno tracker blasts out in stereo.

The demo then shows a flight over a cubic voxelspace landscape before launching into the highlight of the demo, a rotating tunnel with a bird-like design on its walls with the same bird-like object spinning across the foreground complete with shading. Other parts include a very realistic fire effect and credits rotating in 3D.

The whole demo, which lasts nearly seven minutes, is crammed into an incredible 64K which includes the graphics, music and music player! The demo does need the monitor definition files to be edited, but instructions are included.

If you only get one demo for your Risc PC, make sure you get this one. *Blu* is available from The Datafile and from the Stuttgart ftp server on the net. It can also be found on the Digital Databank and Arctic BBSs.

Mike Enderby

New PD site

A new PD site has recently been set up on the net, with the aim of collecting as much Acorn PD as possible. The site is a Web server based in Germany and is definitely worth supporting. The organisers are also implementing a special download mechanism, making the acquisition of software even easier. More information can be obtained by surfing to the web page at ftp://ftp.uni-kl.de/pub/acorn/acornet/info/www/index.html or by e-mail to Guido Steiner at steiner@physik.uni-kl.de.

Dingy foresty place

Readers of the Acorn games newsgroups will be well aware of a brand new game under development by Tom Cooper. Despite much hype generated by the author himself, little information about what the *Darkwood* game will actually be like has been released, although an early demo did see the light of day very briefly at the show in Harrogate on the *Acorn User* stand. I have to say it looked very much like Tom's best game to date and features Tom's famous 'Gerald Shading' – a cousin of Victor Graphics, no doubt. Tom says that a PD demo should be ready soon, and I'll keep you informed on its progress in the coming months.

QTM

Another update of *Acorn User's* music player *QTM*, is now available. Version 1.24 features a few speed improvements and some bug fixes and new features for games use. A completely new version including the turbo player and a new desktop interface will be ready soon.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or preferably, by e-mail to quantum@digibank.demon.co.uk or online on the Arcade BBS.

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Fast colour and mono printing. Colour resolution of 360dpi and when using the special high speed black cartridge in mono with smoothing up to 720dpi. *The most flexible choice if the majority of you work is in black and white (prints at twice the speed of the BJ-200 in mono) but there is a colour requirement.*

BJC-70

BJC-70 + TurboDriver
£249 + £10 p&p + VAT
(304.32 inc.)

A portable version of the colour and mono BJC-4000, with the same dpi. Just 1.4kg and 300mm wide. *This should be your choice if portability is the priority -fits in the average briefcase (otherwise see the BJC-4000, which offers greater speed and ink capacity).*

Introducing the very latest Printers & TurboDrivers from Canon & Computer Concepts -the right answer, whatever your printing requirements.

All printer/TurboDriver bundles are available direct from Computer Concepts.

All printers are supplied with all necessary leads, a user guide, one ink cartridge (or set of), DOS & Windows drivers and one years off site maintenance. The stand alone TurboDrivers can be bought from any Acorn dealer, the RRP is £49 + VAT, street prices may vary. The new printers and TurboDrivers are suitable for all Acorn RISC computers, with 2MBytes of RAM (4MBytes for colour) and RISC OS 3.1 or later, !Printers 1.22 or later (a hard disc and !Printers 1.28 recommended).

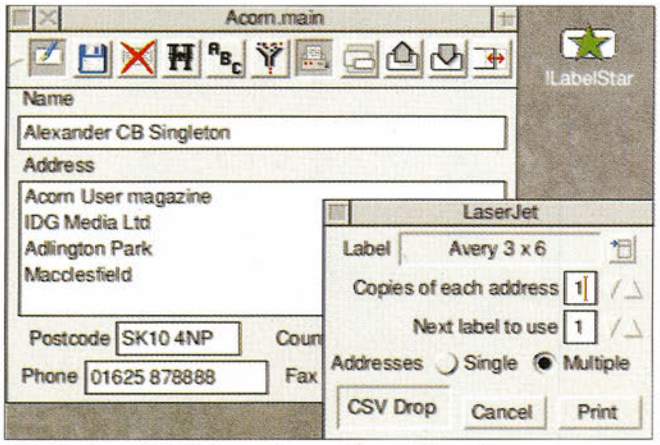
Computer Concepts Ltd
Gaddesden Place
Hemel Hempstead • Herts HP2 6EX
Tel: 01442 351000 • Fax: 01442 351010
Email: Info@cconcepts.co.uk

From database to labels

I WOULD have thought that most database owners use their package to store names and addresses. Consequently, I find myself wondering why *DataPower*, *Recordz* and the like don't have label printing facilities befitting top-of-the-range spreadsheets.

All the Acorn databases will print labels. Apart from *S-Base*, all will print them without any fuss whatsoever. Yet only *ImpactPro* will allow you to specify which label the first address will be printed on. After all, labels are expensive and you won't want to render a whole sheet useless after just using one or two of them.

Of course, not everyone needs the flexibility of a database. Enter *LabelStar* – an exceedingly intuitive contact database and label printer. The label printing facilities are more WYSIWYG than in *ImpactPro*. You can also drag-and-drop addresses into a word processor.



LabelStar from Circle Software has sensible printing options.

Circle Software hopes to make future versions of *LabelStar* capable of integrating with other applications, whereby *LabelStar*'s Print dialogue box could be activated by, say, *Ovation Pro*. The idea behind this is that software producers would not have to re-invent the wheel for every program they wrote. All label printing applications would accept the same messages and, therefore, users would not be forced into purchasing particular products.

Circle Software
Tel: (01793) 770021

Making the most from a spreadsheet

WHAT is a macro? This is a question which gets asked every so often. In its simplest form a macro is a short cut. Let's say you want the program to save your document, print it, then close it while you're away having a cup of coffee. You could record these actions and then get your spreadsheet to run through them as many times as you want later on.

More complex macros require you to program them. If you have a copy of *Schema 2* or can run the demo on the *Acorn User* CD-ROM, type the following into *MacroEdit*.

```
MACRO acorn_abuser
LOCAL au
au = INPUT("Acorn User","What is the
best Acorn magazine?","Acorn
User","OK","Cancel")
=au
ENDMACRO
```

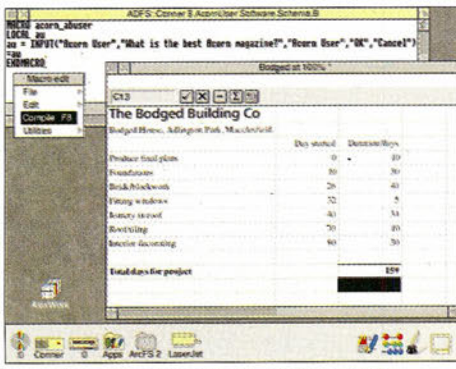
Once you've typed it in and saved it, press F8 which 'compiles' it. Double-click on the compiled file which loads it into *Schema*.

What this macro does is add the function *acorn_abuser* to *Schema 2*. Typing *=acorn_abuser()* into the formula bar produces a dialogue box asking you what the best Acorn magazine is. Either accept the given answer or modify it and click on OK. You will then find the answer displayed into the cell selected when you type in the formula.

I hope this will have whetted your appetite for macros, which can really be quite useful. Although the listing given is only applicable to *Schema 2*, macros can also be written for *Eureka 3*.

• If you own an Amstrad NC-100 and a spreadsheet on your Acorn, you may well want to transfer worksheets between the two. Senlac Computing markets *N-Connect* which provides the software to allow you to do this.

Senlac Computing
Tel: (01273) 208074



Compiling a macro in *Schema 2*'s *MacroEdit*.

Competition winners

Here are the answers to the June issue's competition. Bill had an Electron with *Elite*. Bob's A5000 was accompanied by *ProArtisan 2*, while Mark (our editor) had a Risc PC with *Knowledge Organiser*. Jonathan's A3010 ran *Schema* and Steve's A4 ran *Plot*. Thanks to all who entered and to Clares who generously provided the prizes.

First prize of *Schema 2* was won by Catherine Grant of Glasgow. Mr JG Mist of Hampshire won the second prize of *Plot*. Third prize of *Knowledge Organiser 2* was won by Andrew Looms of Devon.

A7000 for business

I must say that from a business point of view, Acorn's new A7000 range is outstanding. When you consider that for the same price you can only get a less responsive DOS box with 256 colour graphics and a two button mouse, you begin to realise that the A7000 should be very successful indeed.

The Risc PC is all very well, but for many commercial users, a cheaper, less upgradeable machine is just as good. How many businesses need four podule slots, second processors, VRAM and so on?

Master of the files

Can't afford an expensive database? If so, *Masterfile 3* from Beebug may be for you. It comes in a professional-looking box which contains a couple of discs, the manual, release notes and a reference card. *Masterfile* is an intuitive package with features such as multiple subsets, indexing and password protection. It's not relational in any way and doesn't sport the page layout facilities of *DataPower* (printing is text only). However, for your £49 + VAT, you are getting very good value for money.

Beebug
Tel: (01727) 840303
Fax: (01727) 860263

Contacting me

You can contact the Business page by writing to me, Alex Singleton, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: alex@acornusr.demon.co.uk.


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Education

New computers, new regime

ACORN'S long-awaited announcement about new computers coincided with its decision to alter the marketing arrangements for education. Now schools will purchase their computers directly from Acorn, and on-site support will be provided by one of 25 agents who will receive a commission for any machines sold in their area. Each area of the country has had an agent appointed to provide support to all the schools in that area – which could be anything up to 1000 institutions.

This may be the right move for Acorn, but the way it was done was, to be as generous as possible, shabby. Most of the educational dealers appear to have been unceremoniously dumped, and some were not even properly informed. I believe an Acorn representative should have told the dealers in person, and for many, that was the case.

Regrettably, due to an administrative mix-up, a letter was sent prematurely to developers telling them of the wonderful new scheme. Some of the developers are also dealers and, unfortunately, that is how many found out how that they were no longer dealers. Some of the educational dealers have been very loyal to Acorn for many years and for some, their business is now all but finished. For others that is not the case, as they also sell and produce software and other hardware. But for those who only sell Acorn kit and nothing else – because Acorn would not allow its products to be sold alongside other platforms in the education market – effectively they no longer have a business.

I recognise that the dealers are not charities and were there to make money, but even so, I think they deserved better. Much better.



Acorn House on Vision Park in Histon; in future, schools will buy all Acorn machines direct from here, bypassing the local dealer network.

Hi-Tech pen friends all over the world

ENCOURAGING children to write to others in far off lands is not a new idea. I remember when I was at primary school I used to write to a girl who lived in Canada, and then in secondary school to the captain of a cruise liner who used to send me a card from each port he visited. Having a pen-pal is an invaluable way of gaining insight into other cultures first-hand, and I would suggest it's second only to actually visiting the place. It seems we still wish to communicate with people in far-off places, but now the electronic age is with us, we can use e-mail.

I recently received a letter from Paul Tyson who is the assistant principal of Kenmure Intermediate School which is situated in Dunedin in New Zealand's South Island. The school has about 180 students aged between 11 and 13 (boys and girls) and would very much like to receive some e-mail from students in this country. The school's e-mail address is kenmure@taranaki.ac.nz.

Acorn User magazine finds its way to the four corners of the planet. Perhaps others who recognise the potential of electronic pen-pals might care to send me *brief* details of their institution (name, location, size and age range) together with their e-mail address and I'll publish a list and add to it from time to time. If there are any professionals out there who would be willing to receive e-mail from students wanting more information about their work, please send in details (name, location, profession) and I will place your address in a file on the cover disc.

I would be interested to hear of any friendships struck up in this way and of any existing international electronic pen-pals.

Networks and education

This month, a slight crossover occurs between Education and Networks. In the education section, there is an article on good network management by Bill Lamin, who runs an Acorn network and has some interesting and useful tips to make the Network manager's life a little easier.

Clearly some people are still experiencing some problems with their Acorn networks. As you may have noticed, I also write the Network page in *Acorn User*, so if you are having problems with your network I would be happy to field questions on that subject, or if you have any hints and tips relating to networks I would be pleased to hear from you.

Welcome to Joanna

Welcome to Jo Allen who has reviewed a couple of Science programs – the first of which appears this month. Congratulations are also due to Joanna who recently passed her PGCE (Post-Graduate Certificate of Education).

Anglia video price cut down

As from 1 September, Anglia Television has substantially cut the price of its *Videopacks* from £34.95 to £25.

Those who are not familiar with *Videopacks* should read (or re-read) Colin Rouse's article on page 59 on the June issue of *Acorn User*.

Cheap rodents

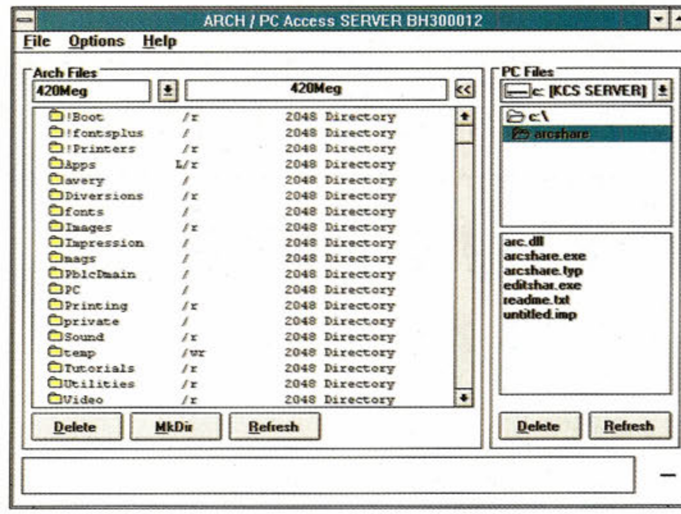
Further to July's mice article, where the replacement of faulty mice was generally recommended over their repair, CPC in Preston can supply Acorn mice at an astonishing £8.95. CPC is on (01772) 654477

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to GPreston@arcade.demon.co.uk.

Arcshare™

Acorn to PC Networking Software



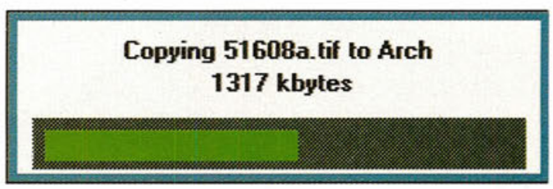
Its finally happened. A company has come up with a simple and inexpensive solution to an age old problem.

Getting access to files stored on a PC has always been a problem for Acorn computer owners. There has always been Floppy Disk transfers, but these are slow and limited to 1.44Mb. There has been several attempts to "Network" the two computers together but most attempts have been problematic and needed a great deal of extra hardware.

Arcshare is the latest program from KCS which allows any Acorn computer with an Access network card to talk to any PC with a network card & Windows.

Arcshare needs no extra hardware other than cheap network cards. Arcshare is very easy to use through its graphical interface and is, on average 40 times quicker than using a floppy disk, but with no file size limitation. Arcshare can even use CD Rom drives from a different machine.

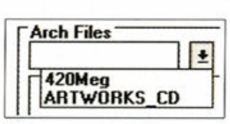
Available Now.



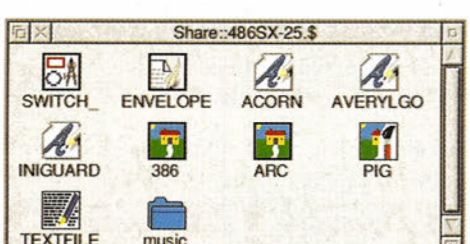
In the Main screen on Arcshare Client, both the Acorn and the PC directories are visible. Files can either be copied, or deleted, even new directories can be created on the Acorn from the PC. Arcshare has the advantage, that it can be run directly from the Windows Filemanager so that file manipulation is simple. Arcshare can run under a Windows for Workgroups network in conjunction with other PC's on the same network. There is no limit as to the amount of Acorns that can be seen from the PC on the Access network.

On the Acorn, the PC directories are designed to look just like any other Acorn directory. In fact, Arcshare makes the PC behave as if it were part of an Access network. Files can be copied from the PC directories to acorn directories in the normal manner. Files can even be copied from one PC to another PC via the Acorn.

It's time to join the PC and the Acorn on the same network. Call KCS now to find out more about Arcshare and networking Acorns to PC's.



CD Roms, Hard Drives & other Acorn Computers can be seen & used by the PC.



The PC Directory looks like just another Acorn Directory, thanks to Automatic, remote Filetyping.



Ideal for School Networks!

Arcshare Client v1.4

* Allows file transfers between Acorn and PC Computers.
* No Filesize Limitation.
* Automatic Filetyping when the Acorn receives a file so that the file is ready to be loaded into an application straight away.
* Automatic File Extensions added when a file is transferred from the Acorn to the PC so that the file can be loaded into a program straight away.
* Easy to Use Graphic Interface.
* No "Dedicated Server" Computer required.
* Connects directly to Acorn Access Network. Very easy to setup and install.
* Works with Windows 3.1, 3.11, Windows 95 & Windows NT

Arcshare Server v1.4

* Has ALL the Functions of Arcshare Client v1.4 but with the following additional extras.
* Allows transfers of files from the Acorn.
* When a Window is open displaying a PC directory, all the files are filetyped even though they are stored on the PC!
* Files can even be copied from PC to PC from the Acorn.
* Any Acorn on the Network can access the PC.
* Makes the PC system look like another Acorn Access system.
* Files can be loaded into applications directly from the PC.

Prices

Arcshare Client v1.4 £79.00 & Vat

Arcshare Server v1.4 £99.00 & Vat

Available from:

Kimberley Computer Services. 73 Chapel Street, Leigh, Lancashire, WN7 2DA. Tel - 01942 677777. Fax 01942 672300. email - Info@kcsprem.demon.co.uk

& other reputable Acorn Dealers

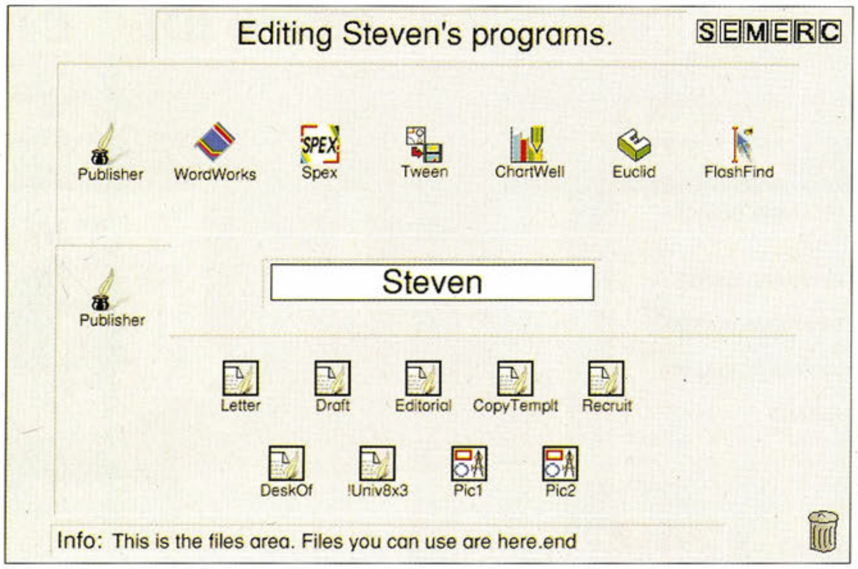
Primary Front End

SEMERC has recently released a program which provides students (particularly younger ones) with an easy-to-use front-end. Imaginatively called *Front_End*, it enables the teacher to set up a window containing all the applications individual students may require. The screenshot shows Steven's window which can only be accessed by entering a name, which could be a password. Steven's work is also displayed when the associated application is selected.

There is an on-line help/info facility and one feature of which teachers will approve – the ability to display the application name without the pling(!). Switch users are also catered for. Primarily designed to ease access, *Front_End* also provides a limited amount of protection, so is especially suitable for *Access* networks, especially those in primary schools. Different selections of applications may be supplied to different students and files relating to applications may also be displayed with the selected application.

Front_End costs £25 + VAT for a single user – site licence price to be announced.

SEMERC
Tel: 0161-627 4469
Fax: 0161-627 2381



FrontEnd helps organise all the applications on the network and provides some security.

Tip for the month

THERE are now several client/server applications which run in addition to the AUN fileserver. The obvious one is the printer server, but there's also the CD server, Teletext server (mentioned elsewhere on this page), and e-mail server. Add to these gateways and application servers and you soon find you've got half-a-dozen or more top-end computers which are apparently doing nothing and cannot be used by clients.

Doubling up is the answer, but what goes best with what? The table on the cover disc (*Network.Doubling* in the *Regulars* archive) should help, but it's only a guide as a great deal depends on the times of heavy network traffic. It's based on using a network in a school where traffic is heavy at the beginning of lessons when students are loading applications and their work, and at the end when work is being saved and printed, but relatively light in between. In any event, it's unwise to mix more than two such applications on the same computer.

More network printing

FOLLOWING on from June's feature on network printing, one company which wasn't featured was Calligraph. Calligraph supplies direct-drive laser printer kits and also has its own network spooler. Unlike some other spoolers, Calligraph's spooler includes its own client end called *EcoPrint*, so doesn't suffer from having to use *Printers*.

Of course, *EcoPrint* is only suitable for Calligraph's direct drive kits and not Computer Concepts'. Canon printers supplied by Computer Concepts as part of a *Laser Direct* kit can only be used with this system if they are connected to a Calligraph controller card and not the original CC controller. Calligraph controller cards are £130 each, plus £10 for a printer cable. The spooler is £69 and includes a full site licence.

Calligraph
Tel: (01223) 566642
Fax: (01223) 566643

Admin

Of all the tasks I have to do as Network Manager, the most irksome is finding passwords when students have lost them or changed them and forgotten them. A new management suite called *Admin* doesn't make the task any less tiresome, but it makes it easier and a lot quicker.

SortPass is used first to sort the user file and delete any old users. This needs to be done before the main program can be used, and then again after any additions or deletions.

Admin is then loaded and double-clicking on the application icon opens a window into which you enter the user name. Within seconds, the user profile with the password is displayed. On the cover disc is a limited-life demo called *Zap-Scrap* which demonstrates some of the features of this program. *Admin* costs £39.95.

Room J Software
Tel: (01736) 762541

Design IT's TeleServe

Teletext software has come on in leaps and bounds recently. Design IT has recently released a new client/server version of the software which will support up to 200 clients. The teletext receiver is supplied in the form of a podule and this must be installed into the serving computer which must also contain a hard disc to cache the pages. The software uses a script language so that customised instructions can be fed to the receiver specifying pages to be saved, the order they are received, format for saving etc.

As with all client/server utilities like Teletext, ideally the serving computer should be dedicated to that task although doubling up is possible.

Design IT
Tel: (01902) 894775

Contacting me

You can contact the Network page by writing to me, Geoff Preston, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to GPreston@arcade.demon.co.uk.

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Cover disc

C Help

Authors: Gareth Boden and Guttorm Vik

THIS *Acorn User* exclusive is a must for all C programmers. It is a hypertext help manual which provides a complete guide to C programming. It includes descriptions and a user guide to all the C language: keywords, structures, functions, expressions and so on.

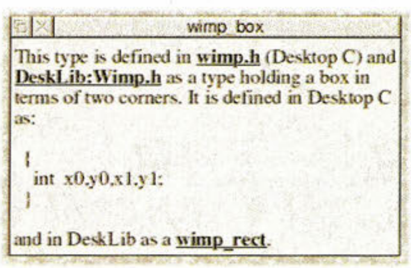
However, there is much more than this in the manual; over 800K of text. For instance, there is a comprehensive section on pre-processor directives, those awkward expressions beginning with a '#' sign at the start of most C programs, like:

```
#include <stdio.h>
```

or

```
#define LOW_SCORE 20
```

CHelp also contains help for compiler directives, linker directives, make files and libraries for the Beebug *Easy C* implementation of C.



This much information can easily be gained by looking through the manuals for the software and by reading a book on C programming – or the *Acorn User* C for yourself tutorial – although the information is presented in a highly compact and usable form here in *CHelp*. However, information on RISC OS-specific libraries has previously been hard to come by, especially for WIMP libraries.

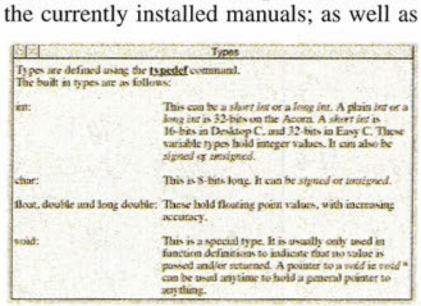
CHelp has information on the Shared C Library provided by Acorn which implements all the standard ANSI C functions. It explains the syntax and use of all the ANSI functions such as the input/output files in the header file *stdio.h* and all the mathematical functions in *math.h*.

WIMP and RISC OS functions are also catered for by *CHelp*. It has information on the Acorn *RISCOS_Lib* library, the RISC OS functions provided with Beebug's *Easy C*, the Freeware WIMP library *DeskLib*, and the *TimsLib* extension to it. These are presented in a user-friendly and informative manner, with cross-linking between references for the different libraries. Instead of having to thumb through a badly-indexed manual or work through confusing header files, you follow simple hypertext links to find all the information.

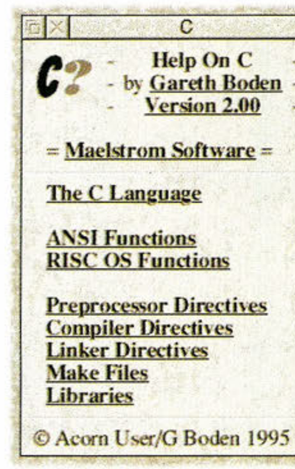
To use CHelp

CHelp is a *StrongHelp* manual; the information is displayed using Guttorm Vik's *StrongHelp* hypertext application. This is supplied on the disc along with *CHelp* and various other manuals. For reasons of space, the full set of manuals usually provided with *StrongHelp* could not be included on the disc. These are available from most PD libraries and Acorn ftp sites, and *may* be on next month's disc if there is room as they are also useful.

To use *StrongHelp*, run the program and click with Select on the icon on the icon bar. A window will open showing all the currently installed manuals; as well as



CHelp, the copy on the cover disc has manuals for Assembler, the VDU commands, *StrongHelp* itself, and an example filetypes manual. Throughout *StrongHelp*,



underlined words in bold lead to links to other pages, so clicking on (for instance) the word 'C' in the title window opens the first *CHelp* page. From there, clicking on 'ANSI Functions' takes you to the window describing such functions, and so on...

Following links like this with Adjust rather than Select closes the original window, Filer-style, which will stop your Desktop getting too cluttered.

StrongHelp is itself a very powerful hypertext system; it is Freeware and is written by Guttorm Vik, author of the text editor *StrongEd*. Ambitious users can create their own manuals – some help is provided for this – type:

```
*StrongCreate <manualname>
```

at the command line to create a blank manual image file. Looking at the structure of other manuals will help with this.

StrongHelp requires RISC OS 3.1 or later to run.

Regular features

Various authors

ONCE again, there's a spread of cover disc items which tie-in with regular features in the magazine.

• The *C* directory contains two programs illustrating recursion. *Factorial* calculates the factorial of a number between one and 15 (the '!' function on your calculator) and *levels* is a very simple function which goes up and down five levels of recursion, just to illustrate what's going on.

• In the education directory there is a utility for clearing unwanted and wasteful *!Scrap* directories off a network, called *ZapScrap*. Instructions for its use are contained in the *!Help* file. The utility forms part of the *Admin* network manager software from Room J Software ((01736) 762541).

Also in this directory is a *VersaTile* file, and a *Draw* file giving an example of the tiles used. You will of course need *VersaTile* to use this, although you can experiment with the *Draw* file by copying and tessellating the shapes using *Draw*.

• The *Games* directory contains a set of hints and codes for *Star Fighter 3000*. The text file *SFCodes* only contains the codes, but the *Draw* files have a brief description and assessment of each level as well.

• There is a *Draw* file in the *Networks* directory which contains a table giving the recommended servers on a network whose functions can de 'doubled-up' onto a single machine.

• In this month's Run the RISC column, Mike Cook explains how a joystick can be attached to the printer port. The source code for the module to do this and the module itself are in the *RuntheRISC* directory.

• Last but by no means least, all the programs described in the ✱INFO section of the magazine can be found in the *StarInfo* directory.

Director

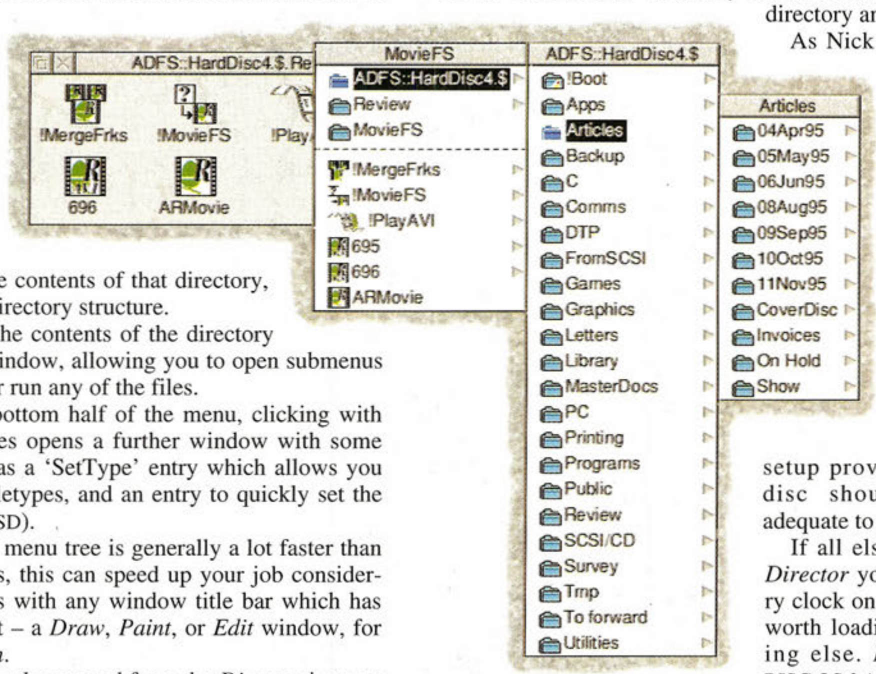
Author: Nick Craig-Wood

THIS program is one of those utilities that offers something for everyone. The more technical aspects of the software are adequately covered by Nick's article in the magazine, though this may leave non-experts wondering if *Director* can possibly have anything to offer them. The answer is most certainly yes.

For instance, have you ever needed to find a file deep in the directory structure on your disc? Or perhaps you are editing a document and suddenly need to pull in a graphic from a directory on the hard disc that isn't actually in any of your open windows?

Director makes all this much easier. When loaded it will allow you to click with the Menu button of the mouse on the title bar of a Filer window, generating a menu in two halves:

- The top half of the menu has entries for the directory and all parent directories, right back to the root directory on the disc. From all these directories, submenus can be opened showing the contents of that directory, and so on throughout the directory structure.
- The bottom half shows the contents of the directory as displayed in the Filer window, allowing you to open submenus for any of the directories or run any of the files.



With either the top or bottom half of the menu, clicking with Menu on any of the entries opens a further window with some very useful options, such as a 'SetType' entry which allows you to choose from a list of filetypes, and an entry to quickly set the Currently Set Directory (CSD).

Since moving through a menu tree is generally a lot faster than opening endless directories, this can speed up your job considerably. This trick also works with any window title bar which has the pathname of a file in it – a *Draw*, *Paint*, or *Edit* window, for instance but not *Impression*.

Three different menus can be opened from the *Director* icon on the icon bar by clicking with Select, Menu and Adjust. The menu opened with Select is primarily a Filer menu allowing easy access to various standard directories and all installed filing systems. Clicking with Menu opens a menu concerned with *Director* itself, allowing you access to *Director's* suite of menus and utilities. You can also configure aspects of *Director's* behaviour, and remove utilities and filters from here.

Clicking with Adjust opens the useful Pinboard menu which allows access to many Desktop and system features which can otherwise be awkward to access, for instance: the screen blanker, 'extra' characters, currently installed modules, the *!Scrap* directory and so on.

As Nick Craig-Wood's article explains, all of this is configurable, although altering the basic setup of *Director* does need a degree of technical knowledge. The *Director* module itself is simply the hook off which all these functions are hung. The setup provided on the cover disc should be perfectly adequate to get you started.

If all else fails, by loading *Director* you get a low-memory clock on your Desktop – it's worth loading for this if nothing else. *Director* requires RISC OS 3.1 or greater to run.

Disc information



THE appearance of the *Acorn User* cover disc will change depending upon whether or not you have RISC OS 2 or 3 installed on your machine. If you load or boot *ArcFS* in your boot sequence, this will also have an effect.

RISC OS 3 users will normally be presented with the usual display of icons; they can open the archives by double-clicking upon them (this is the equivalent of the 'View' option in the *Menu* program). To get help on an archive, RISC OS 3 users should choose Help from the App. 'Appname' submenu obtained by clicking with Menu over the archive icon. If *ArcFS* is included in your boot sequence, you will need to run it before the archives are displayed as applications, though they will open as normal archives.

RISC OS 2 users will have to work slightly harder. They should first run *ArcFS*, which is the program which uncompresses the data in the archives. Double-clicking on an archive will open it, revealing a *!Help* file, a *!Run* file, a *!Sprites* file and a directory containing the archived data. Loading the *!Help* file into a text editor will give information on the archive contents.

If you do not want the disc to boot automatically, you can set the system variable:

```
set Magazine$Disc -noboot
```

in your boot sequence. I assume that if you do this, you have the technical knowledge to open the archives 'manually'.

If your disc is faulty, then you should either return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH (if it does not verify or is damaged) or to the editorial office at *Acorn User* (if it verifies). The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.101 from Pineapple Software.

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17" SVGA 0.28 MPR2 Colour	£490.00	e	£575.75
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Acorn AKF53 Med Res Colour	£200.00	e	£235.00
Acorn AKF60 Hi Res Colour	£295.00	e	£346.63
Acorn AKF85 As Above, 17"	£690.00	e	£810.75

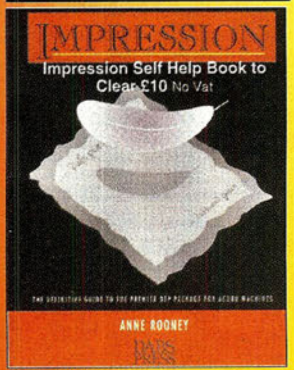
CD ACCESSORIES

	Ex Vat		Inc Vat
CD Caddy	£5.00	a	£5.88
CD Disk Cleaner	£2.98	b	£3.50
CD Tray Flipper Holds 20	£2.55	b	£3.00
Empty CD Jewel Case	£0.50	a	£0.59
CD Protector Rings (Pack of 5)	£1.50	a	£1.76

ACORN Software

	Ex Vat		Inc Vat
10 out of 10 Software All Titles	£16.90	a	£19.86
1st Word Plus	£17.50	a	£20.56
Arc Comm2	£35.00	a	£41.13
Artworks CD Ver	£110.00	a	£129.25
Avery Label Templates	£5.00	a	£5.88
Black Angel	£22.98	a	£27.00
Borders for Impression 1	£8.51	a	10.00
Borders for Impression 2	£8.51	a	£10.00
Canon Fodder	£18.48	a	£21.71
Crystal Maze	£24.00	a	£28.20
The Crystal Rain Forest	£35.50	a	£41.71
Dataword	£11.91	a	£13.99
Dune II	£28.50	a	£33.49
Easiword v2	£25.00	a	£29.38
Easyfont 3	£25.00	a	£29.38
Euclid 2	£25.00	a	£29.38
Midnight Graphics Express	£15.00	a	£17.63
Guile	£18.00	a	£21.15
Labeller	£7.00	a	£8.23
Magic Pockets	£19.50	a	£22.91
Micro English	£18.00	a	£21.15
Micro French	£18.00	a	£21.15
Micro German	£18.00	a	£12.15
Pendown Etoiles	£41.70	a	£48.99
Pendown Plus	£68.00	a	£79.90
Pinpont	£45.00	a	£52.88
Pinpoint 2	£65.00	a	£76.38
Pipedream 4	£80.85	a	£95.00
Quest for Gold	£12.00	a	£14.10
Simon the Sorcerer	£28.00	a	£32.90
Tech Writer 2	£125.00	a	£146.88
Tower of Babel Comp.	£21.28	a	£25.00
Wolfenstein 3D	£22.00	a	£25.85
Wordz	£50.00	a	£58.75
Worra Cad	£65.00	a	£76.38
Xenon 2	£18.00	a	£21.15
Zool (1.44MB HD Only)	£14.00	a	£16.45

Huge range of Software available, call for list.



Impression Self Help Book to Clear £10 No Vat

ACORN UPGRADES

	Ex Vat		Inc Vat
4-8 MB Up. (310,440,400/1)	£249.00	c	£292.57
4-8 MB Up. (A3000/5000)	£249.00	c	£292.57
Arm 3 (A3000/400) & FPA Socket	£114	c	£133.95
Arm 3 As above with FPA.	£179.00	c	£210.32
FPA Upgrade for A5000/540	£79.00	c	£92.82
A3010 1-2 MB Upgrade	£45.00	b	£52.87
A3010 2-4 MB Upgrade	£89.00	c	£104.57
A3010 1-4 MB Upgrade	£132.00	c	£155.10
A3020/4000 2-4 MB Upgrade	£83.00	b	£97.52
A5000 2-4 MB Upgrade	£79.00	b	£92.82
A3000 1-2 MB Upgrade	£52.00	b	£61.10
A3000 1-4 MB Upgrade	£114.00	c	£133.95
A3000 Serial Port Upgrade	£19.00	b	£22.32
A310 4Mb Upgrade	£137.00	c	£160.97
Risc OS Carrier Board (A310)	£22.00	b	£25.85
MEMC 1A Upgrade Kit	£29.00	b	£34.07
A400/1 1Mb Upgrade per meg	£45.00	b	£52.87
Risc OS 3.1 Up. Rom & Books	£75.00	d	£88.12
Midi Expansion Card	£79.00	c	£92.82
CD ROM Drives SCSI	£POA	d	£POA
CD ROM Drives IDE	£POA	d	£POA
Scanlight Junior Handheld	£175.00	d	£205.62
VIDI Archimedes	£55.00	d	£64.62
Hard Drives (int) A3010/3020			
A3010 HD Interface	£69.00	d	£81.07
A3010 HD Int.Face & User Port	£79.00	d	£92.83
85Mb Hard Drive 2.5" IDE	£100.00	d	£117.50
120Mb Hard Drive 2.5" IDE	£110.00	d	£129.25
170Mb Hard Drive 2.5" IDE	£135.00	d	£158.63
210Mb Hard Drive 2.5" IDE	£155.00	d	£182.13
340Mb Hard Drive 2.5" IDE	£190.00	d	£223.25
Hard Drives (int) A4000/5000			
420Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
560Mb Hard Drive 3.5" IDE	£149.00	d	£175.08
520Mb Hard Drive 3.5" SCSI	£195.00	d	£229.13
1Gb Hard Drive 3.5" SCSI	£325.00	e	£381.88
Hard Drives (ext) A3000			
-A3000 Req Interface & Case:			
A3000 IDE Interface Podule	£69.00	d	£81.07
A3000 Hard Drive Case	£65.00	d	£76.38
210Mb Hard Drive 3.5" IDE	£105.00	d	£123.38
420Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
560Mb Hard Drive 3.5" IDE	£149.00	d	£175.08
Acorn Original Mouse	£25.00	b	£29.38
Acorn Replacement Mouse	£19.00	b	£22.33



Novelty Mouse Mats	Ex Vat		Inc Vat
Hamburger	£3.56	a	£4.18
Pig	£3.56	a	£4.18
Clown	£3.56	a	£4.18
Ladies Top	£3.56	a	£4.18
Male Torso	£3.56	a	£4.18
Football	£3.56	a	£4.18
Cat	£3.56	a	£4.18
Mouse	£3.56	a	£4.18
Pen	£3.56	a	£4.18
Car	£3.56	a	£4.18
Motorbike	£3.56	a	£4.18
Frog	£3.56	a	£4.18
Cosmic Rings Screen Saver Set	£9.00	a	£10.58
Battlescape Screen Saver Set	£9.00	a	£10.58

INTERNET

Heard the latest "Buzz" word from the Computer World?

Want to get connected to the rest of the World for the price of a local phone call?

Want your own EMAIL address?

We'll show you how, and provide all the information and software you need, be it for the Acorn or the PC. Call now and speak to our technical staff who will be happy to advise on the best type of modem, who provides the services and who is the best priced on the market.

office data

Copy Holders	Ex Vat		Inc Vat
Paperclip - Monitor Arm	£4.26	b	£5.00
Copytravel - Portable	£4.26	b	£5.00
Copyplus Desktop	£7.50	b	£8.81
Copyplus Solid Base	£12.00	c	£14.10
Copyplus Flexible Arm	£12.72	c	£14.95
Copyplus A3 Extension Kit	£7.00	b	£8.23
Various Accessories			
Ergo Mouse Pad - Hard Mat	£4.26	b	£5.00
Ergo Mouse Tray & Wrist Rest	£6.00	b	£7.05
Mouse/Scanner Holder	£2.50	b	£2.94
Novelty Cat Mouse Holder Red	£2.50	b	£2.94
Novelty Cat Mouse Holder Black	£2.50	b	£2.94
Novelty Cat Mouse Holder Grey	£2.50	b	£2.94
Wildlife Mouse Mat	£4.00	a	£4.70
Wildlife Wrist Rest	£4.50	b	£5.29
Dinosaur Mouse Mat	£4.00	a	£4.70
Dinosaur Wrist Rest	£4.50	b	£5.29
Combo Pad Thick Mouse Mat	£5.25	b	£6.17
Keyboard Extenders	£16.00	d	£18.80
Keyboard Calculator	£4.26	a	£5.00
Keyboard Station (PC)	£15.90	d	£18.68
Wrist Support Fabric	£3.00	b	£3.52
Wrist Support Plastic	£4.90	b	£5.76
Disk Porter Ring Binder 3.5"	£4.26	b	£5.00
Disk Clips (3) Ring Binder 3.5"	£3.25	a	£3.82
Disk Pocket Leatherette holds 6	£6.00	b	£7.05
Disk Mailer holds 6 Reuseable	£3.50	a	£4.11
Monitor Swivel Stand 12-14"	£14.00	d	£16.45
Universal 2 Pce Printer Stand	£3.00	c	£3.52
As Above with Printout Tray	£6.50	d	£7.64
Stax 132 Column Printer Stand	£13.00	d	£15.28
Monitor Filters			
Economy Glass Filter 14"	£18.40	d	£21.63
Economy Glass Filter 15"	£21.50	d	£25.26
Economy Glass Filter 17"	£65.00	e	£76.38
Light Glass Screen Filter 12-15"	£56.00	e	£65.80
Dark Glass Screen Filter 12-15"	£66.00	e	£77.55
Privacy Filter 60% View 12-15"	£85.00	e	£99.88

Schools & Networking Section

NEW

Education Specialists

TRADE IN DEALS
for Schools & Teachers

Our PC's are built to very high and exacting standards to take advantage of todays Multi Media applications.

KCS are offering any school or teacher that wants to upgrade from an old acorn computer to a new Multi Media PC, the chance to do so at unbelievably low prices. We can take one Acorn or an entire network of them in Part Exchange. As budgets get smaller and resources, tighter. The Multi Media PC's offer an excellent way of utilising your IT budget to maximum effect.

All PC's for schools now come supplied with Iniguard Protect, which is a program that makes Windows a captive system. This means that the transition from Acorn to PC is as painless as possible. Iniguard Protect will stop any unauthorised access to the computer and ensure that the PC gives years of trouble free performance.

We are able to offer finance for single machines and leasing for several machines, we can even incorporate the network installation costs into the lease if you require.

KCS, with a wealth of experience in school networks and Multi Media machines are now best placed to serve your needs, please call or fax your requirements and we'll show you how we can be extremely competetive yet show excellent support when you need it most, in I.T.



DX2 - 66 - 256k Cache	**DX4 - 100** - 256k Cache
4Mb Ram	8Mb Ram
560Mb Hard Drive	560Mb Hard Drive
VLB 1Mb Graphics Card	VLB 1Mb Graphics Card
VLB Enhanced I/O	VLB Enhanced I/O
1.44Mb Floppy	1.44Mb Floppy
14" SVGA Colour Monitor	14" SVGA Colour Monitor
UK Keyboard	UK Keyboard
Mouse	Mouse
Twin Speed CD ROM	Quad Speed CD ROM
16 Bit Stereo Soundcard	16 Bit Stereo Soundcard
Dos & Windows	Dos & Windows
Encarta 95	Encarta 95
Microsoft Works	Microsoft Works
SRP £879	SRP £999
Teacher £850	Teacher £950
School £800	School £910

Arcshare™
Acorn to PC Networking Software

Dealer enquiries welcome.

ArcShare

Arcshare is an Acorn to PC networking packages which make sthe PC behave as if it was an Acorn Access system. This allows fast easy transfers of data from or to either machine via a simple to control interface on the PC. The Acorn on the other hand needs no special software other than Access. The Acorn is then able to see all the files on the PC just like any other networked drive, whats more, all the files stored on the PC have the correct filetype, so they can be loaded and used straight away.



Available Now, no special hardware required. Arcshare Server 1.4 £99 & Vat

School Network SERVER

Dealer enquiries welcome.

KCS have developed the KCS NetServer system for entire school network management.

The NetServer utilises the advanced Networking and security features of Microsoft Windows NT environment and the recently launched Arcshare, Acorn to PC networking software.

The NetServer will allow Acorn computers to talk to PC computers and Macintosh at the same time on the same network. Files and printers can be shared no matter were they are on the network. The high performance nature of the two models of NetServer are ideal for fileserving in establishments that require a high level of useability and integrity.

NetServer 1000
100Mhz Processor, 24Mb RAM, 1Gb IDE Hard Drive, Quad Speed CD ROM, Windows NT 3.5x, 1.44Mb Floppy, PCI Graphics Card, MPR2 Colour Monitor, 100Mbit PCI Network Card.

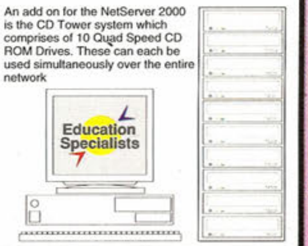
Free Installation ***£2750.00***

NetServer 2000
100Mhz Processor, 32Mb RAM, 2Gb SCSI Hard Drive Stripe Set, Quad Speed CD ROM, Windows NT 3.5x, 1.44Mb Floppy, PCI Graphics Card, MPR2 Colour Monitor, 100Mbit PCI Network Card 2Gb DAT Backup Unit.

Free Installation ***£4250.00***

Using the NetServer at the heart of a network enables easy network management in one machine with access to Macs, Acorns, PC's, and even Unix systems. The real beauty about this system is that the "Client" machines don't notice anything different about the network, as Arcshare and Windows NT effortlessly blend together to give full control and file manipulation.

An add on for the NetServer 2000 is the CD Tower system which comprises of 10 Quad Speed CD ROM Drives. These can each be used simultaneously over the entire network



INKJET & LASER PAPER/OHP's

	Ex Vat		Inc Vat
Iridium Laser/Inkjet Paper 100 grm A4 500 shts	£6.00	d	£7.05
Iridium Laser/Inkjet Paper 100 grm A3 500 shts	£14.00	d	£16.45
Laser Plus Laser/Inkjet Paper 90 grm A4 500 shts	£5.10	d	£5.99
Laser Plus Inkjet Coated Paper for Colour Printing A4 200 shts	£16.00	d	£18.80
Premier Matt Coated Inkjet Paper for Colour Printing A4 200 shts	£14.00	d	£16.45
Premier Matt Coated Inkjet Paper for Colour Printing A4 50 shts	£5.00	b	£5.88
Hewlett Packard Glossy Paper 51636J A4 50 shts	£41.00	b	£48.18
Premier Gloss Coated Inkjet Paper for High Quality Colour Printing A4 50 shts	£35.00	b	£41.13
Premier Gloss Coated Inkjet Paper for High Quality Colour Printing A4 20 shts	£16.00	b	£18.80
Canon LC-101 Coated Inkjet Paper for Colour Printing A4 200 shts	£18.00	d	£21.15
Canon LC-101 Coated Inkjet Paper for Colour Printing A3 100 shts	£41.00	d	£48.18
Epson Coated Inkjet 720 DPI For High Quality Colour Printing (Stylus) A4 200 shts	£19.00	d	£22.33
Epson Coated Inkjet 360 DPI For Colour Printing on Stylus Colour A4 200 shts	£17.00	d	£19.98
Premier Inkjet Transparencies for Overhead Projectors A4 50 shts	£30.00	b	£35.25
Premier Inkjet Transparencies for Overhead Projectors A4 20 shts	£15.00	b	£17.63
Hewlett Packard Inkjet Transparencies for Overhead Projectors 51636G A4 50 shts	£40.00	b	£47.00
Avery Inkjet Transparencies for Overhead Projectors A4 50 shts	£34.00	b	£39.95
3M Laser Transparencies for Overhead Projectors A4 50 shts	£25.00	b	£29.38
Premier Laser Transparencies for Overhead Projectors A4 50 shts	£25.00	b	£29.38
Premier Laser Transparencies for Overhead Projectors A4 20 shts	£12.50	b	£14.69

If you have access to email, ask for a full catalogue via the Internet.
Email us at info@kcsprem.demon.co.uk

NETWORKING Accs

	Ex Vat		Inc Vat
BNC Terminators	£2.00	a	£2.35
BNC Solderless Crimp Plugs	£1.25	a	£1.47
BNC Crimp Plug Cable Boot	£0.50	a	£0.59
BNC Inline Connectors	£1.50	a	£1.76
BNC T Piece	£1.50	a	£1.76
BNC Cable with Plugs 2M	£4.00	a	£4.70
BNC Cable with Plugs 5M	£8.00	b	£9.40
BNC Cable with Plugs 10M	£12.00	b	£14.10
BNC Cable with Plugs 25M	£19.00	d	£22.33
BNC Cable 100M Reel	£60.00	d	£70.50
NE2000 ISA PC Combo Card	£30.00	c	£35.25
NE2000 PCI PC Combo Card	£ POA	c	£ POA
NE2000 Notebook PC Adaptor	£85.00	d	£99.88
Access Card for Acorn - from	£85.00	d	£99.88
Repeater Hubs (Various)	£ POA	e	£ POA
Bridges (Various)	£ POA	e	£ POA

KCS are experienced in most types of Networking and can install a complete network from £300. Call for details or advice.

RISC PC UPGRADES

	Ex Vat		Inc Vat
Risc PC 1MB VRAM	£70.00	b	£82.25
Risc PC 2MB VRAM	£189.00	c	£222.08
Risc PC Extra Slice & PSU	£99.00	d	£116.33
Risc PC Extra Slice (no PSU)	£39.00	d	£45.83
Risc PC Heavy Duty Keyboard	£64.00	d	£75.20
Risc PC Keyboard Extension	£6.50	b	£7.64
Risc PC Mouse Extension	£6.50	b	£7.64
Risc PC Mouse Mat (Rare)	£4.00	b	£4.70
Risc PC 2nd HD Fixing Kit	£6.00	b	£7.05
Risc PC Memory 4Mb	£118.00	c	£138.65
Risc PC Memory 8Mb	£236.00	c	£277.30
Risc PC Memory 16Mb	£365.00	c	£428.88
Risc PC Memory 32Mb	£768.00	c	£902.40
Risc PC 700 Board	POA	d	POA

RPC 486 Games CD

A collection of over 150 of the very best PC Shareware & PD games available all on one CD ROM. Includes DOOM & Apoge Stuff £15 & Vat

MODEMS

	Ex Vat		Inc Vat
14,400K External Fax/Modem	£115.00	d	£135.13
28,800K External Fax/Modem	£210.00	d	£246.75
Arcfax Software	£28.00	b	£32.90
ArcComm Software	£40.00	b	£47.00
Modem Cable	£8.50	b	£9.99

Opening Hours
Showroom & Mail Order Sales

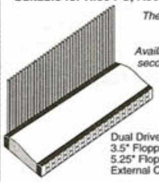
Monday		10am - 6pm
Tuesday		10am - 6pm
Wednesday		10am - 6pm
Thursday	**Late Night**	**10am - 8pm**
Friday	**Late Night**	**10am - 8pm**
Saturday		10am - 6pm
Sunday		*By Appointment*

Fax orders anytime

DUAL DRIVE

Dual Drive adaptor which allows a second floppy drive to be added, either internally or externally.

Suitable for Risc PC, A3010, A3020 & A4000.



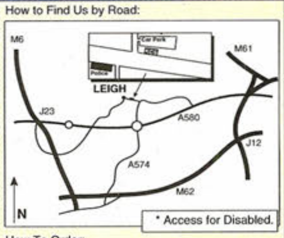
The dual drive adaptor is very easy to fit.

Available with or without the second floppy drive or case.

Dual Drive Adaptor, 3.5" Floppy & Case **£80.00 & Vat** e

Dual Drive Adaptor	£20.00	b
3.5" Floppy Drive	£25.00	c
5.25" Floppy Drive	£42.00	c
External Case & PSU	£45.00	d

How to Find Us by Road:



How To Order:
By Post - Send Full details of your order, together with payment details. Include your Name, Address & Phone Number. Always Include your Postcode.
By Phone - Our Staff will take all the necessary details over the phone, Your order will usually be sent the same day.
By Fax - As by Post - Fax No: **01942 672300**
By Email - Send full details to our sales address at the top of this advert with payment details. Or, if you prefer, leave a number and we'll call you back.

Carriage Charges -
A=£1, B=£2, C=£3.50, D=£4.50, E=£6, F=£9.
a+a=B, a+b=C, a+c=D, c+b=E, etc Call if Unsure.

Caught in the net

The Acorn User World Wide Web site is now on-line. Mark Moxon shows how to use it, and how it can become the best source of independent Acorn information on the net.

Publishing as we know it is about to change for the better. The ubiquitous Internet is the new medium for electronic publishing, and this month *Acorn User* is to become the first Acorn magazine to open a World Wide Web site.

The World Wide Web (WWW) is the name given to a very large collection of on-line information databases, all accessible through the Internet. Essentially WWW sites are collections of hypertext documents, or electronic books which link their pages together using techniques familiar to anyone who has used a multimedia package. Our WWW site reflects the marketplace and the magazine, and is an extension of the tome you are holding in your hand.

How to access the site

The *Acorn User* WWW site can be accessed by pointing your web browser at the following URL:

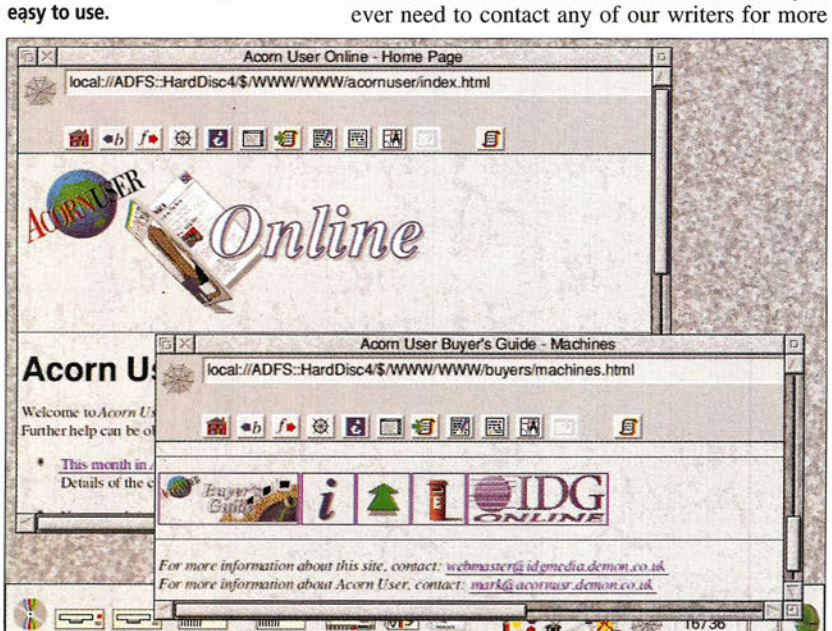
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http://www.idg.co.uk/acornuser/
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If you have no idea what this means, then there's a special offer over the page that will get you up and running on the net with absolutely no problems: it's real plug and play. If you are already on the net, then you simply need to type the above URL into your browser, and it will go off and fetch the *Acorn User* home page.

The site is logically arranged into four sections, all accessible from the main home page. The diagram opposite describes the sections in more detail; as you can see, the four logical sections come together to form a formidable collection of information and advice. And if you ever need to contact any of our writers for more personal help, you can click on the Mail icon at any time to mail us.

There's also an introduction to the site, which you can access by clicking the relevant link from the home page. We recommend that you have a look at this page the first time you access the site.

Below is an example of accessing the *Acorn User* WWW site using the public domain program *ArcWeb*. You can see the collection of icons along the bottom of each page, enabling you to navigate round the site quickly and logically. There's always a help icon if you get stuck, and you can mail the *Acorn User* team with your comments just by clicking on the mail box icon. It really is that easy to use.



Using the icons

At the bottom of every page on the site there are a number of icons (though not all of them will appear all the time). These icons enable you to navigate round the site, and ensure that you won't get lost. Here's a quick guide to them all.

The Home icon. This takes you back to the Home page for the area you are in. So, for example, if you are looking at the *Acorn User* Online area, this will bring you back to the Home page for *Acorn User* Online. Clicking from the Home page of any of the four areas brings you back to the main Home page, which is the one you see first when you access this site.

The Help icon. Clicking on this brings up a page detailing the area you are currently in, and how to navigate it. So, for example, if you are in the *Acorn User* Online area, clicking on Help will describe how the *Acorn User* Online area is organised, and what it contains.

The Mail icon. Click on this icon if you wish to send mail to any of the *Acorn User* team, or those who look after this web site. You can mail the Webmaster and the editor of *Acorn User* from any page, but this icon leads to the e-mail addresses of all the *Acorn User* writers.

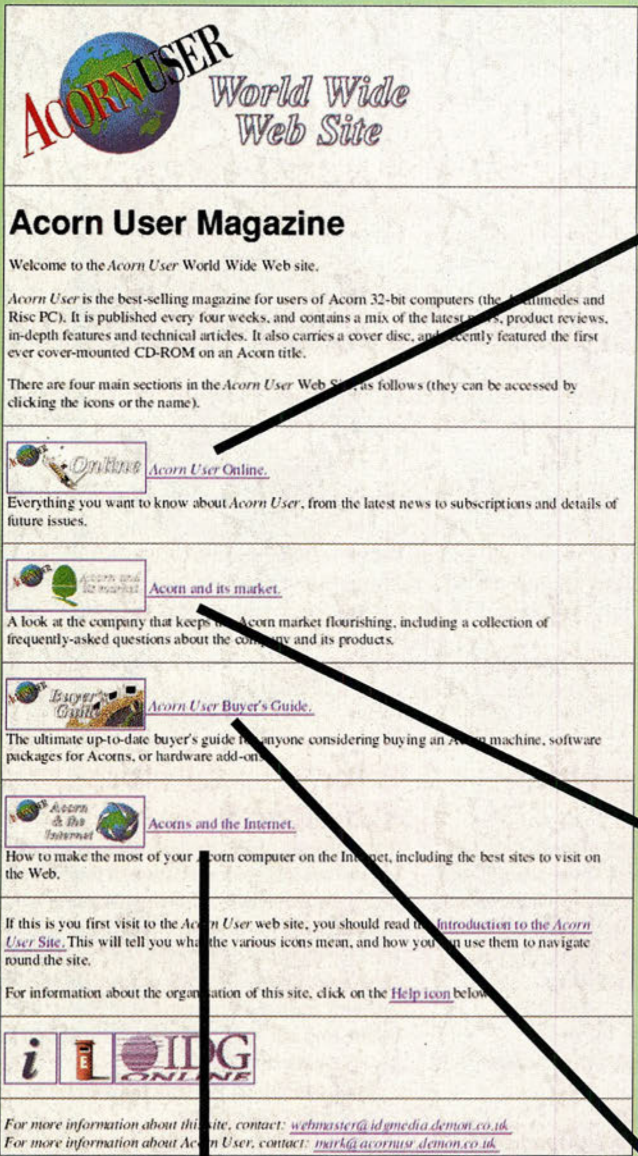
The Up icon. Click on this icon to move up one level, so if you call up a help page, clicking on this will return you to where you asked for help. If you continue to press this button, you will eventually reach the main Home page for the whole site.

The Forward icon. Sometimes pages are linked together sequentially, and you can use the Forward and Back icons to navigate through them, as if you were reading a normal book.

The Back icon. Used in conjunction with the Forward icon, the Back icon allows you to move backwards through a sequence of sequential pages.

The IDG Online icon. The *Acorn User* World Wide Web site is just one of the areas on the IDG Online server (IDG Media is the company that publishes *Acorn User*). Click on this icon to access the Home page for IDG Online.

Organisation of the Acorn User World Wide Web site http://www.idg.co.uk/acornuser/



Acorn User Magazine

Welcome to the *Acorn User* World Wide Web site.

Acorn User is the best-selling magazine for users of Acorn 32-bit computers (the [illegible]medes and Risc PC). It is published every four weeks, and contains a mix of the latest [illegible]s, product reviews, in-depth features and technical articles. It also carries a cover disc, an[illegible]cently featured the first ever cover-mounted CD-ROM on an Acorn title.

There are four main sections in the *Acorn User* Web S[illegible] as follows (they can be accessed by clicking the icons or the name).

Acorn User Online.

Everything you want to know about *Acorn User*, from the latest news to subscriptions and details of future issues.

Acorn and its market.

A look at the company that keeps [illegible] Acorn market flourishing, including a collection of frequently-asked questions about the co[illegible]ny and its products.

Acorn User Buyer's Guide.

The ultimate up-to-date buyer's guide f[illegible] anyone considering buying an A[illegible]n machine, software packages for Acorns, or hardware add-ons.

Acorns and the Internet.

How to make the most of your [illegible]corn computer on the In[illegible]net, including the best sites to visit on the Web.

If this is you first visit to the *Ac[illegible]n User* web site, you should read th[illegible] Introduction to the *Acorn User* Site. This will tell you wha[illegible] the various icons mean, and how you [illegible]n use them to navigate round the site.

For information about the organ[illegible]ation of this site, click on the Help icon below.

For more information about thi[illegible] site, contact: webmaster@idgmedia.demon.co.uk
For more information about Ac[illegible]n User, contact: mark@acornusr.demon.co.uk

Main home page



Acorn User Online

Acorn User Online is concerned with the magazine itself. Here we have details of the current and next issues, the *Acorn User* diary, the latest news stories as they break, and an index to back issues. You can mail anyone in the *Acorn User* team from here, and soon we'll be including links to files from past magazine discs.



Acorn and its market

In the Acorn section you'll find details of Acorn's history, from the early days of the Acorn Atom through to its RISC computers, and a glossary of Acorn-related computer terms. There's also a version of the comp.sys.acorn FAQ (Frequently Asked Questions) document, so if you have a question about Acorn, this is where you'll find the answer.



Acorn and the Internet

Getting onto the Internet is easier than you think – especially with our offer overleaf – but there are still plenty of questions that can be asked. This area contains answers to all your Internet-related queries, links to areas of the Internet that are of interest to Acorn users, details of Internet-related programs, and much more.



Acorn User Buyer's Guide

Buying hardware and software for your Acorn can be quite daunting, but the *Acorn User* Buyer's Guide will help you through the process, with details of all Acorn's machines, addresses of Acorn-related companies, advice on which products are best, a selection of reviews from past issues of the magazine... it's all here.

Internet bargain

The Acorn User Internet Offer

Want to surf the Internet, but don't want to get involved in jargon or complicated configuring? Dying to look at the *Acorn User* web pages, but haven't got an Internet connection? Then you want our Internet pack, exclusively produced for *Acorn User* by ArgoNet, the new Internet company from the same stable as VTi and Eclipse.

Each pack contains everything you need to set your account up, and it couldn't be simpler. All you need to do is plug in the modem supplied, run the *Voyager* software pack, and that's it: there are no hidden extras. The software is programmed with your own personal password and account details, and is automatically set up to work straight away, without the need for any further action. And if there are any problems, there's a free number you can call for technical support as part of the package.

If you already own a modem, then there's a pack for you that includes the software and the connection for just £59 inc VAT. The software will enable you to post and receive e-mail, transfer files, surf the World Wide Web and more, all from a very easy-to-use interface.

How much you have to pay

The packs shown below all include your connection to the Internet. As with other services, this has to be paid for on a monthly or annual basis, but with each pack you get free registration (normally £25) and one month's free subscription to ArgoNet. After this month, the cost of subscribing to the Internet is just £12.50 + VAT per month: there's nothing else to pay except your phone bill. You can pay this monthly subscription using your credit card, or you can save £15 by paying for a whole year by credit card or cheque, at a cost of £135 + VAT.

And because ArgoNet can offer local call access to 90 per cent of the population, you can stay online every day for two hours for less that the price of a pint of beer. There are no other hidden costs, so there's never been a better time to join the Information Superhighway.

Offer 1: 28.8k solution £249 inc VAT

SAVE OVER £100

If you want the fastest access to the Internet possible, then you need our 28.8k solution. The modem included in this pack runs at a blistering 28,800 bits per second, the fastest speed commonly used on the Internet today. The pack, which has a RRP of over £350, contains:

- A US Robotics Sportster 28.8k modem
- Modem cable
- Pre-configured *Voyager* Internet suite
- ArgoNet registration
- One month's free access
- Pre- and post-sales support via a free 0500 number
- Courier dispatch

Offer 2: 14.4k solution £189 inc VAT

SAVE OVER £100

If your budget is a little more modest, then our 14.4k solution is just for you. The modem runs at 14,400 bits per second, the most common speed for Internet users, and easily fast enough even for intense World Wide Web access. The pack, which has an RRP of £300, contains:

- A US Robotics Sportster 14.4k modem
- Modem cable
- Pre-configured *Voyager* Internet suite
- ArgoNet registration
- One month's free access
- Pre- and post-sales support via a free 0500 number
- Courier dispatch

Offer 3: Software solution £59 inc VAT

SAVE £60

If you already own a modem, then all you need to take advantage of our low-cost Internet service is the software – a full internet suite offering WWW browsing, e-mail, news file transfer – and the subscription to the ArgoNet service. This pack will work with all US Robotics modems and Hayes-compatible modems: if in doubt, ring our free 0500 pre-sales support number. The pack contains:

- Pre-configured *Voyager* Internet suite
- ArgoNet registration
- One month's free access
- Pre- and post-sales support via a free 0500 number



Note for those with pre-A5000 machines

If you own an A300, A400, A3000 or A540 machine, then you have a slower serial port than in later machines, so the maximum speed you will be able to run your modem is 9600 bits per second. As a result, if you have an older machine, you will not be able to get the best out of the modems on offer. With any pre-Risc PC machine the 28.8k modem will not run at its fastest speed.

However, if you purchase a fast serial port card – which we can supply for just £79 inc VAT – then you can run your modem faster with no problems. And, of course, a faster modem will save you money on your phone bill...

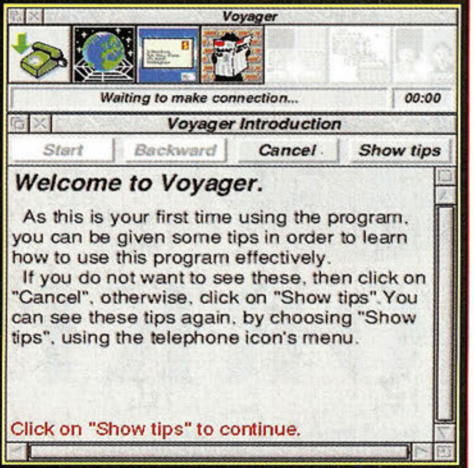
To order your fast serial port card, just tick the box on the order form.

For more information, call free on 0500 585 586

The Voyager Internet suite

The *Voyager* software provided with your ArgoNet connection is tailored to be incredibly easy to use. When you receive the pack, it will be pre-configured to include all the details of your account such as your password, as well as the best and cheapest number for you to call to access the Internet. It couldn't be easier, and no-one else provides such a simple service for Internet connection.

The *Voyager* suite seamlessly combines electronic mail, news reading, web browsing, file transfer and more, and integrates these functions so clicking on a web address in a newsgroup will automatically access that web site, without any more effort on your part. It really is that easy to use.



Other important aspects of the pack include: graphical ftp file transfer using icons and automatic log-on; full news and mail reader with editing, quoting, an address book and so on; web browser with support for virtually all Netscape extensions, hot lists, caching, sound, graphics, text and more; automatic log-on scripts for telnet; and security features to prevent access to certain areas of the net, so you can stop your kids surfing areas they shouldn't.

The *Voyager* pack is the only Internet pack worth looking at, and it's also the most cost-effective.

The ArgoNet service

When you subscribe to ArgoNet, you get a unique e-mail address – like mmoxon@argo.co.uk – and access to full e-mail, news, web and file transfer facilities, all at a local call rate for 90 per cent of the population. All network links are provided by the well-known company Unipalm Pipex, guaranteeing quality network connections to the Internet in Europe and the United States, and ensuring that there aren't too many users for the modems available, so you don't have to wait ages for a free line (and that's guaranteed).

The ArgoNet service is complete: it gives you access to the full Internet, all without extra charges as there are with Compuserve. Argo Online runs its modem lines at 28.8k, which is twice as fast as the 14.4k often found when using Demon, and the technical support provided by ArgoNet is not only excellent, it's totally free. Best of all, as ArgoNet is a sister company to VTi, technical support for Acorn users will be the best in the country, so even if you have problems, there will be someone to help.

ArgoNet will also have its own World Wide Web site, with all the latest news from ArgoNet, VTi and Eclipse, as well as other areas of interest for Acorn users, both home and educational. Its ftp (file transfer) site will contain lots of Acorn-related files, and the news server will give access to well over 10,000 different newsgroups worldwide, including all the Acorn groups like comp.sys.acorn.misc.

The ArgoNet service: it's the best Internet service Acorn users can buy.

Please fill in all sections.

Section 1: Personal details

Name: ____________

Address: ____________

____

____

Post code: ____________

Daytime tel no: ____________

Section 2: Machine details

Machine: ____________

Memory: ____________

Modem (if applicable): ____________

Section 3: Order details

Please send me __ 28.8k packs @ £249 each

Please send me __ 14.4k packs @ £189 each

Please send me __ Software packs @ £59 each

Please send me __ Fast serial cards @ £79 each

Total cost: ____________

☐ I enclose a cheque/postal order, made payable to 'AU Internet offer', for the above amount.

☐ Please charge my credit card, details of which are in Section 5.

Section 4: e-mail address

We need to allocate you an e-mail name, but to make sure yours is unique, we need three different names from which we will pick one. Please give three names, in order of preference, with no more than eight characters in each, so for the name 'Mark Moxon' you could choose 'mark.moxon', 'markm' or 'moxy', for example.

Name 1: ____________

Name 2: ____________

Name 3: ____________

Section 5: Subscription payment details

☐ **Option 1:** I would like to pay monthly by credit card (£12.50 + VAT per month)

☐ **Option 2:** I would like to pay annually in advance and save £15 (£158.63 inc VAT).

☐ I enclose a cheque for my pack plus my annual subscription.

☐ Here are my credit card details (Access, Visa or Amex) – please charge me as appropriate.

Card number: Expiry date: __ /__

____

☐ I agree to allow my credit card to be debited monthly in advance after my first month's free access at a rate of £12.50 + VAT per month. I understand that I can give one month's notice to cancel my subscription at any time. ArgoNet will notify me at least one month in advance of any price changes.

☐ I have paid £135 + VAT (£158.63 inc) for a year's access in advance.

I understand that ArgoNet will provide an ongoing Internet connection with private e-mail address and free updates to the *Voyager* access package as they become available, and that ArgoNet will endeavour to the best of its ability to ensure that all services are available 24 hours a day, 365 days a year and will, wherever possible, notify users in advance of changes to service.

Signed: ____________

Date: __ /__

E&OE. Please send this order form and payment to: Acorn User Internet Offer, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP. Please allow 28 days for delivery and account set-up.

☐ Tick here if you do not want te receive promotional material from other companies.

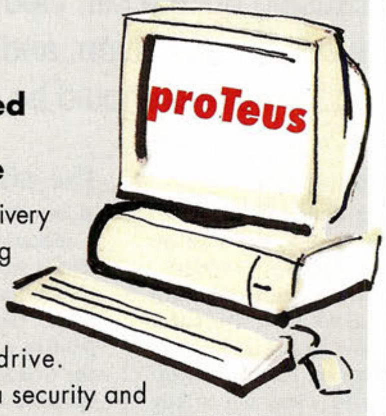


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External proTeus drive Acorn		3-1392-A	£649.00
Ext proTeus drive, SCSI II card/cable Risc PC		3-1404-A	£799.00
External proTeus drive, SCSI card/cable A5000, A540, A400, A300		3-1405-A	£699.00
External proTeus drive, SCSI card/cable A4000, A30XO		3-1406-A	£699.00
Audio mixer for int proTeus drive for Risc PC		3-1528-A	£35.00
Extra 650Mb Optical cartridge for proTeus		3-1407-G	£39.00
CD-Net II Software		5-1265-A	£150.00
Nucleus 1 - 10 User Licence		2-1592-A	£199.00
Nucleus 11 - 25 User Licence		2-1593-A	£399.00
Nucleus 26 - 50 User Licence		2-1594-A	£549.00
Nucleus 51 - 100 User Licence		2-1595-A	£749.00
Nucleus 101 + User Licence		2-1596-A	£1299.00
Total Costs of Goods			
Delivery/insurance/packing*			**£10.00**
Total Cost Ex VAT			
GRAND TOTAL Inc VAT (17.5%)			

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ADDRESS: ______________________

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❏ Please debit my Access/Visa/Mastercard

Card No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Card expiry date __________

Cardholder's signature ______________________

* Please note delivery charges to mainland UK only. Cumana reserves the right to alter price and specification at any time. Offers subject to availability. E & OE 08/95



Agents



Acorn's recent overhaul of the way it sells computers to education is causing quite a stir. Geoff Preston looks at the consequences for education, and Ian Burley finds out if the non-education users should be worried.

Why did Acorn effectively cut off two thirds of its approved education dealership last month? Is it the end of the road for those dealers in the Acorn market? Has Acorn dealt a huge blow to a key section of its own supporters, or has it taken a brave strategic business decision which will, in the long term, strengthen its position as one of the main suppliers of computers to education customers? Whatever the final answer turns out to be, Acorn has certainly stirred up a wasps' nest in the process, and if you go by Acorn third-party industry gossip, morale is now at an all-time low – unless, of course, you are one of the newly appointed Acorn education agents.



Simon Liggett

What has happened?

So what *has* Acorn done? First of all, Acorn says that only the new agencies are 'ex-approved Acorn Education dealers.' Education dealership agreements with other companies have not been rescinded; however, they are now largely redundant. To get the best prices on Acorn computers, a school would be crazy not to buy from Acorn direct, in the process earning its local Acorn education agency a commission – whether or not that agency actively did anything to earn it.

Acorn's new agents will provide personnel on the ground with the sole task of representing Acorn. However, *Acorn User* understands that this doesn't preclude that company from, say, selling PCs, as long as the nominated agency staff aren't involved and those PCs aren't being pitched against Acorn. Agents will work closely with Acorn's own sales team to target potential customers and fight for business against any rivals like RM, Apple and the PC brigade. Acorn says arrangements like this have been very effective in the recent past.

Despite the cynics, Acorn says it has proof that schools can still be persuaded to join the Acorn family against intense competition, even in territories not known as Acorn strongholds if Acorn agents go in and pitch directly against Research Machines and Apple. At the same time, duplication of effort by rival Acorn dealers has been eliminated, as have the box-shifters who moved in on tenders at the last minute to steal deals on minute profit margins.

The effect on dealers

Acorn dealers outside the agency scheme – education or otherwise – cannot hope to match Acorn's direct prices because their cost price is *higher* than Acorn's direct price. The only way they will stay competitive is by adding considerable value to the overall order. But this is exactly what Acorn expects will happen, according to Acorn's new managing director, David Lee:

'It's regrettable but inevitable that some dealers will be disappointed when changes are made,' says David, 'but we want them to continue doing business with us. I accept that some dealers can't make money just selling the hardware and will use the platform to sell added value services if they want to.

'If they have a reputation they still have an opportunity to sell added-value services and the customer has the choice.'

Acorn has just introduced a retail 20/20 interest-free credit scheme (20 per cent deposit plus 20 months to pay the balance). It's unfortunate that Acorn was not able to announce this deal in time to limit the initial backlash from spurned dealers and their supporters. Acorn says there are further retail/consumer initiatives in the pipeline.

PR problems

What about the public relations aspect? Dealers were queuing up on the Internet to vent their anger at Acorn over the back-door way that news of the agency scheme was disseminated. There have been

of change = ?

complaints that they have had no official communication from Acorn at all or perhaps just a timid car-phone call from the area rep. On the other hand, Acorn's sales and marketing director, Mike O'Riordan, told *Acorn User* that letters to all Acorn dealers had been sent asking them to contact their area reps for details of the new scheme and he had, personally, phoned dozens of companies to discuss the ramifications of the situation.

The two sides don't agree on this at all – though O'Riordan did admit that Acorn's correspondence mailing service hadn't distributed all the letters at the same time, as they had been contracted to. In many eyes, Acorn is guilty of not adequately pre-empting the inevitable negative reaction.

Acorn says the business some education dealers will lose is (according to their past record) so low that they have nothing to complain about. A few others have fallen foul of their geographical location, losing out to a rival who Acorn rates higher. It's interesting to note that some of these businesses aren't 100 per cent dependent on education hardware sales anyway, perhaps selling PCs or developing software too. Did Acorn cynically abandon these dealers for 'compromising' their loyalty? Or did Acorn decide that these businesses could survive the changes better?

Anyone hoping that Acorn will bend to the force of public objection is going to be disappointed. David Lee says he is not going to change the agency scheme and points out that his predecessor, Sam Wauchope, was instrumental in its inception and that the scheme gained full board approval. Wauchope did not resign over the agency issue. Like it or hate it, the agency scheme is here to stay. Perhaps, now, it's best to get on with the job of adapting to the new circumstances and hope that Acorn successfully achieves its goal of expanding its education market share, not just maintaining it.

Ian Burley

Breaking bad news

As I indicate on this month's education page, some dealers are not so much annoyed with Acorn for what they did, but the way in which they did it. Indeed I (and several of the dealers I spoke to) believe Acorn's new policy, in principle, makes sound business sense. Parts of the scheme seems a little suspect, such as the small number of agents spread between a relatively large number of schools, but it's probably a step in the right direction.

The way it was done leaves much to be desired. Decisions like this are inevitably going to upset some people, but Acorn's first duty is to Acorn. Even so, I feel this could have been done with a little more sensitivity. It's a pity Acorn couldn't give some notice of its intentions. Instead, it chose to reward the dealers' loyalty by giving them little more than a couple of days to sort out their affairs. One company had just received new consignments of stationery from the printers bearing the Acorn education dealer logo; another had its 1995/6 catalogue ready to print when Acorn dropped its bombshell.

Acorn's response

In what appears to be an attempt to smooth things over, Kevin Coleman made matters worse with his Internet-based recitation on comp.sys.acorn.misc (Article: 2941 18 July 1995) which included the paragraph:

'If we lose dealers they are, in the main, likely to be those who have had a conflict of interest (that is have used Acorn as a way in to the market and then sold something else) or have not delivered what we have asked of them in terms of service and support to customers in the past.'

That statement had a similar effect as trying to put out a fire by throwing petrol over it. One ex-dealer claimed he didn't qualify on either count, while another, who was believed to be guilty of the first if not both, has been appointed as an agent.

The other gem which went down like a lead balloon was made by Mike O'Riordan: 'The old Acorn education dealers have not had their dealerships taken from them. They can still sell to the education market if they wish.'

The trouble with this theory is that anyone buying for education from one of the ex-dealers would be paying the high street price – in the case of an A3020, that's about £200 more than Acorn's education price. Come off it Mike; you haven't taken the dealerships away, but you've taken away the customers.

Acorn should have got all its dealers together and told them collectively and in person what the new strategy would be. The dealers should then have been given a period of time during which they could have made some plans for their future. I believe that simple piece of common courtesy could have prevented a great deal of the bitterness that this move has invoked.

Acorn Marketing Strategy: 10
Acorn Public Relations: 0

So what's in it for schools?

Well for a start, prices are much lower and much more competitive. An A3020 with 4Mb and multiscan monitor, for example, is now about £250 less – all prices given are for education and do not include VAT – when purchased directly from Acorn. Alternatively, for about the same price as a 4Mb A3020 with multiscan monitor before Acorn's policy change, you can now buy an A7000. The second obvious benefit is that you now don't have to shop around. The price is fixed by Acorn and that is what you'll pay.

The disadvantages appear to be that you have much less opportunity to buy Acorn computers upgraded with third-party hard discs, memory and monitors. Any upgrades must be carried out after purchasing. You also no longer have a choice of supplier unless you're prepared to pay much higher prices.

Geoff Preston AU

The right direction

Nick Craig-Wood shows you how to get your desktop under control.

When I started to write *Director* just over a year ago now, I didn't realise what it would grow into. It started as a kind of tidy up operation to take several useful Desktop utilities and wrap them into one compact Assembler-coded application. However, as time went by – and people wrote in saying they'd like this and that added – *Director* increased in features, but paradoxically decreased in what it could do by default. *Director* doesn't actually do anything if you just run the module on its own; don't panic though, you will find a useful configuration on the cover disc which demonstrates most of *Director's* features.

Using the default set up

Unpack *Director* from the cover disc and run it. It will start up quietly and install an icon under the icon bar with the current time under it.

If you press Menu over the icon you will get *Director's* main menu. Select will give you a paths menu, and Adjust will give you the Pinboard menu. You can get the Pinboard menu by pressing Menu over the backdrop (not over an icon). All these menus are fully configurable, but you should find the initial set provides a good base to work from.

By default, *Director* will bring up directory menus when you click Menu over the title bar of a Filer window – in fact, it works over any type of window with a valid path in it, for example *Paint*, *Edit* or *Draw* windows. Try it; you will find a menu opens which mirrors the contents of the Filer window. It is very easy to traverse sub-directories like this, and to go up the directory tree.

If you click with Select on an item in a *Director* menu it is equivalent to double-clicking it in the Filer widow. If you use Adjust, the action is the same but the menu remains open. If you click Menu, a further menu will open with options relating to that particular file; try it on a sprite file, for instance. You can also bring up this menu (known as the 'menumenu') by clicking on the File 'name' option in a Filer window menu, provided there is one and only one file selected in the window. Note that if you follow the arrow to the right of the entry instead, you will get the standard Filer menu.

The Pinboard menu provides three utility menus – Desktop, System and Filing. Between them they allow you to change mode – try Adjust-clicking on the display manager if you have a Risc PC or the palette utility if you don't – palette, desktop font, desktop tools, backdrop, show you a menu of difficult characters to type in, grab the WIMP sprites for you, change the mouse step, show a list of all tasks, show you the time, allow you to fiddle with modules, show you what is in your *!Scrap* directory, allow you to see and set system variables, blank the screen, show you a list of all open files and allow you to close them, eject your CD, close all your filers, set the current directory…

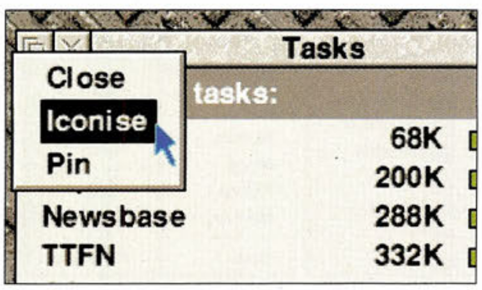
Have a go with *Director* as it stands on the disc and explore its functions. There is a comprehensive help file supplied with *Director*; click on the 'Help' option in the main menu to see it.

Customising Director

I'm now going to assume that you are reasonably familiar with *Director*, and you've decided that some of those menus don't suit you very well and you'd like to change them.

To customise *Director* you will need to load a text editor (*Edit* will do), then choose 'Edit 'Default'' from the 'Menu' sub-menu of the *Director* main menu. This will open a configuration file for you to look at.

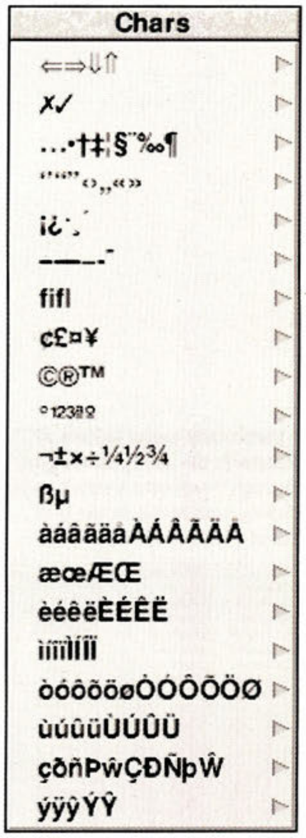
Have a look at this file. It has the definitions for the Pinboard menu and the paths menu, and



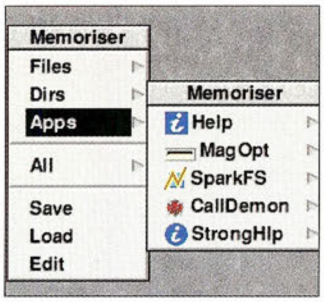
***Director* can filter clicks from any application. For instance, *Director* comes with a filter to intercept menu clicks over the close boxes of windows.**



You can attach directory menus to normal menus. To see an example of this, bring up *Director's* main menu and slide along the 'Director' option. This opens a directory menu on the *Director* application itself.



***Director* will open a window displaying a list of hard-to-access characters.**



***Director* also provides a memoriser to remember the files which you most recently accessed.**

a few other things which you don't need to worry about for now. Let's assume you want to add a new menu with some of your favourite utilities in it, and you would like this to come up on the Pinboard menu. Create the menu first by moving to the end of the file and adding the following lines:

```
Menu Utilities
Option -path
EndMenu
```

Place the cursor after -path, type a space and Shift-drag a utility that you want to appear in the menu into the editor window. This will write in its full path.

Repeat this process a few times and you will get something like:

```
Menu Utilities
Option -path ADFS::Ant.$.Apps.!Memphis
Option -path ADFS::Ant.$.Apps.!StrongHlp
Option -path ADFS::Ant.$.Apps.!Pointer
EndMenu
```

Note that these are from my disc and won't work verbatim on yours.

Now you have created the menu, you need to attach it, so you can see it somewhere. So after the line which says:

```
Command Filer_Run <Root$Dir>.Apps
```

Add

```
Option Utilities -sub *
```

Save the file and choose 'Menu=>Reload' from the main menu.

If an error was given, choose 'Menu=>Debug' to see what caused it. If you bring up the pinboard menu now you should see your menu option and the menu attached to it.

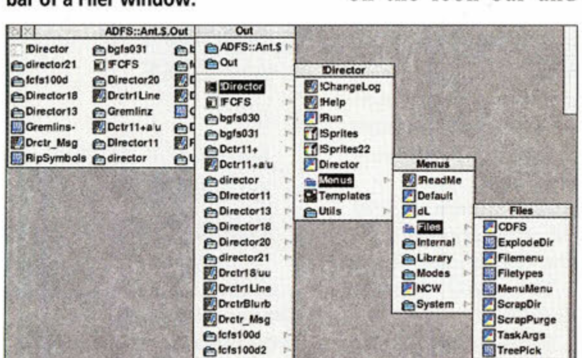
As you might have guessed, the Menu and Option commands can do a huge number of other things. You can run a command from an Option like this:

```
Option "Open my root directory"
Command "Filer_OpenDir ADFS::4.$"
```

If you want full details of the syntax then you will have to look in the *!Help* file supplied with *Director*, and also look at the example menus and the Core menu.

Advanced topics

Director is capable of a lot more than just menus, though. It is possible to create icons on the icon bar and attach commands or menus to them (with DirectorIcon). You can attach commands and menus to existing icon bar icons, or enhance the functionality of an existing application (with DirectorFilter). For instance, you could attach the mode menu to the display manager on Adjust-click with the following command:



A particularly useful feature of *Director* is the ability to navigate through the directory structure by clicking with Menu on the title bar of a Filer window.

```
DirectorFilter "Display Manager Adjust"
"Display Manager" "Mode" -icon IconBar -
adjust
```

Director attaches a similar filter to all drive icons on the icon bar. If you Adjust-click on one then you will get a directory menu of the drive.

These more advanced features are harder work. If you don't just want a menu appearing you may have to write a BASIC program to make it work. This doesn't use any more memory since it is only loaded off the disc when necessary.

So, if you don't like it, change it; you almost certainly can.

Technical details

Director runs as a module task to preserve memory. It will use a dynamic area on machines which are capable to help cut down on RMA fragmentation.

Director was written entirely in *ObjAsm* Assembler, and has a total of 9700 lines (or 228K) of source code. The module is 22K long and for the default set of menus it uses a total (including the module) of about 44K of RAM. If you want to reduce this then you can prune the default menus.

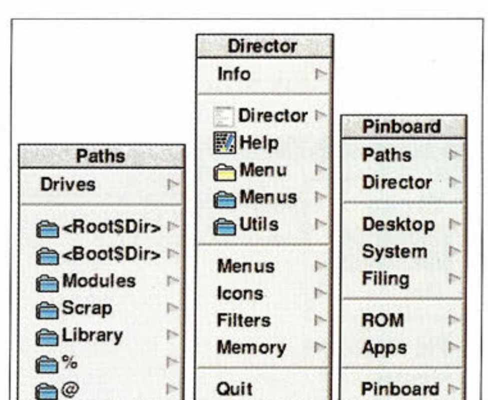
You can see what menus, icons or filters *Director* knows about from the main menu. You can remove them from here, and view the menus, and can also see how much memory *Director* is using.

Final word

Director is Freeware. That means you can copy it about freely as long as you don't modify it or charge for it. See the *!Help* file for full details.

This article just scratches the surface of what *Director* is capable of. For further reading you will have to look at the *!Help* file. I'll just offer a small apology that *Director* isn't easier to configure – I haven't had time to write an easy-to-use front-end. Perhaps you'd like to?

If you create something you'd like to share with other *Director* users then send it to me – my details are given in the *!Help* file – or to *INFO if you would like them to see whether it is suitable for publication in *Acorn User*. AU



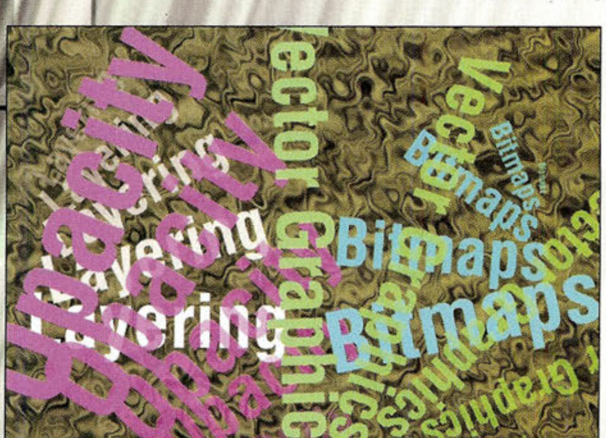
The *Director* menu is fully configurable. These are the menus produced by default by the version of *Director* on the cover disc.

Compo compromise?

Jack Kreindler examines Clares' new package, Composition, which treats bitmaps as objects and allows beautiful collages of images to be built up.

The two areas of 2D graphics software, bitmap based and vector (or object) based, are gradually becoming fused. The advantage of bitmap graphics is that imagery with a very 'real' complexion can be easily created with current painting applications. Vector packages are suited to very 'graphic' artwork characterised by perfect graduations impossible to create by hand, and with faultless curves and lines that only a computer could possibly generate.

The advantage with vector packages is that each object can be moved or manipulated independently of its neighbours, and as the objects are all mathematically described, their resolution is basically limited only by your screen display and eventually your output device. Basic bitmap packages are limited to the resolution of the image used, and the bitmap canvas being the only 'object' means it would be impossible, for instance, to paint a tree in the foreground of your canvas and then move it around a little and cast it into the background without creating a tremendous mess. To be able to 'paint' separate images as discrete objects is the idea that is beginning to merge the major branches of 2D graphics into one.



***Compo's* text manipulation facilities are excellent, and all effects can be undone at the click of a button.**

Techniques merging

The fusion between the two very different areas of graphics is already established on the Mac and PC. Bitmap packages are moving towards the vector packages by using a technique called layering, and a few vector packages now have image manipulation facilities for bitmaps and even painting-style tools which produce brush like effects which are mathematically calculated and not simply plotted onto a fixed resolution canvas.

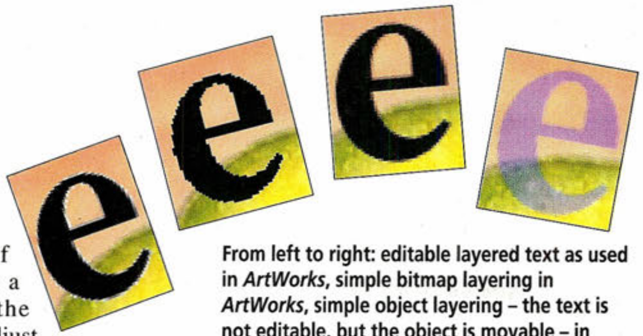
Layering is a system where a canvas is not just a single canvas but is actually regarded as one of many objects. Just as in vector graphics applications, each object is rendered taking into consideration the objects which lie behind and in front of it.

In our aforementioned scene, a bitmap tree can be painted or pasted onto a layer in the foreground, separate from the background, then that layer with the tree can be moved or resized without disturbing the background at all. However, for the computer this can be a very taxing process indeed as the colour of each pixel in each layer must be calculated according to the colours of pixels lying behind and in front of it, depending on transparency levels together with effects like anti-aliasing between layers at the edges of masks.

Enter Composition

So now you know what layering is all about, *Composition* can be described. It is the latest addition to Clares' impressive portfolio of graphics applications and stands as the first package on the Acorn to incorporate bitmap layering. On opening a canvas window in '*Compo*' – as it is affectionately called – you are presented with a very well-designed tool bar attached to an unconventionally black-coloured canvas. Though dark, the canvas automatically gives the impression that it is not a regular 'page' onto which you might paint your design, but rather a space into which you are entering elements of the final picture.

The first thing to do is load in a few bitmaps (sprites, TIFFs, JPEGs and so on) and move them around to create a basic composition. This feels very much like *ArtWorks*, except for one vital aspect; these objects are actually bitmaps with a



From left to right: editable layered text as used in *ArtWorks*, simple bitmap layering in *ArtWorks*, simple object layering – the text is not editable, but the object is movable – in *ArtWorks* and others, and advanced object-based bitmap layering with opacity control and the text still editable, which is what *Compo* offers.

full 256 levels of transparency. Selecting a sprite and dragging the opacity bar with the Adjust button of your mouse instantly changes the transparency level of the sprite to reveal any images behind it. Once the desired level of transparency has been found, you can proceed to move the sprites around as before, with the transparency effect recalculated on the fly. Absolute magic, and as the scene is always rendered from the sprites in the form in which they arrived, you can return the composition to its original state at any time.

Each sprite or bitmap object, strictly speaking, is stored in an image base which can be updated, so any transformations made to the object are calculated from the base sprite. This means that rotations or resizes of objects are direct transformations of the base sprites and not the bitmap object in its present state. This prevents image degradation through multiple transformations. But transformations are slow, unlike in *ArtWorks*, and although the *ChangeFSI* software which comes with RISC OS is fast, the results of rotations are no better than in *ArtWorks* which can rotate and resize bitmaps pretty well in real time.

Importing vector files

Not only is *Compo* a bitmap composition package, it is also perfectly happy with vector files. *Draw* files and *ArtWorks* files can be loaded with great speed and to great effect. As vector files are resolution-independent, the user is presented with a window with control over imported vector file size. An A4 vector file rendered at 100 per cent size is approximately 1024 x 768 pixels in size, which equates to a 3Mb sprite in 24-bit colour; large. Thus the ability to reduce the image size on loading is useful.

Once imported, the vector image is treated as a sprite so you can apply transparency or any of the other effects to the vector file. At present, however, vector artwork which is not rectangular is filled out to a rectangle with a white background, not automatically masked in *Compo*. This can be remedied quickly using the masking facility in *Compo* but unfortunately, transforming masked sprites can lead to visible degradation of the mask, an area which Clares will no doubt be addressing in the ongoing development of the package.

Text and masking

Editable text is a superb feature of *Compo* and one only need to look at some of the pieces in this article to see how the nearly endless number of unique effects can be put to use. Text handling is one of the outstanding features of the program and in fact enables certain types of artwork to be produced in a fraction of the time it would take using other bitmap and vector package combinations.

Masking in *Compo* has some very powerful features such as a wide range of filters which include smoothing, sharpening and dramatic effects like 'Deluge'. 32-bit sprites with masks already included cannot be directly loaded into *Compo* which is annoying as you are forced to load the sprite to canvas and the mask into the separate mask editing window. Masks can be conventional or can be used to distort an image or determine the distribution of colour tints and gamma correction.

The mask editing facilities do lack 8-bit air-brushing and undo functions. At this present, early stage of development, OLE into Spacetech's *Photodesk* – arguably the finest mask-editing tool available – works properly only when outputting the image as a TIFF. This is not a major issue but is one that would not have appeared at all if *Compo* could have loaded in 24-bit sprites with 8-bit masks directly. Naturally, *Compo's* OLE supports export and re-import of the sprites themselves which is necessary as *Compo* is in no way a bitmap editor in the traditional sense.

A wish list

It is of great credit to Clares and Rob Davison, the author of *Compo*, that there really is not enough space in this review to do justice to all the features of the package. Having said that, there are a number of areas where *Compo* does not yet reach the heights it should be able to.

The first of these areas is memory management. When you use an image workbench manipulating multiple deep sprites, free memory rapidly becomes used memory. When you run dry, you would expect the hard disc to start toiling away acting as virtual memory. No such system exists in *Compo*, and whether or not this becomes a reality in future versions, it is not around just now. Because of this fact, my own 26Mb system was really pushed when composing five small text sprites and a 2084x768 background sprite on a 2084x786 canvas. Even for lower end design, 16Mb would be more sensible than 8Mb, and because the screen display is not dithered in 256-colour modes, 2Mb of VRAM is a must.

Compo is sadly exclusive to the Risc PC, and although I'm all for loads of MIPS and millions of colours, not everyone has a Risc PC and many people who send in fantastic artwork using nothing more than A3000, A4000 or A5000 series machines will not be able to reap the unique benefits of *Compo*.

Conclusion

In summary, *Composition* is a fast and powerful object-based bitmap workbench exclusive to the Risc PC and to those owners with bags of RAM. It is a unique package enabling the designer to generate imagery impossible to previously produce on the Acorn, and to whip out compositions in times that, without the package, could be measured as geological epochs.

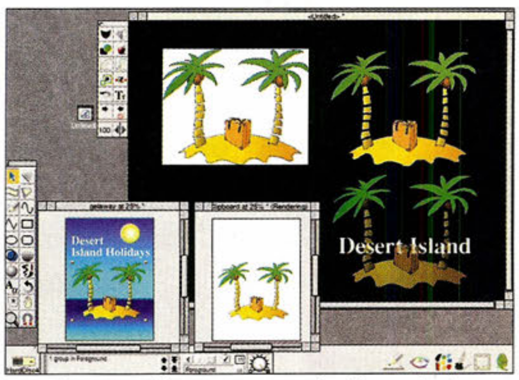
Other extras, such as a beautiful manual and software goodies like a text anti-aliasing fix that pushes the font manager above its 255pt barrier and a file splitter for putting big compositions onto floppies, all help to make *Compo* a very commendable package. I very much enjoy looking forward to the next versions already in development which should further justify the reasonable cost of this innovative program. AU

Product details

Product: Composition
Supplier: Clares Micro Supplies
Tel: (01606) 48511
Fax: (01606) 48512
E-Mail: sales@clares.demon.co.uk
Price: £169.95 inc VAT (£85 inc VAT to *ProArt 24* users, £99.95 for users of other art packages)

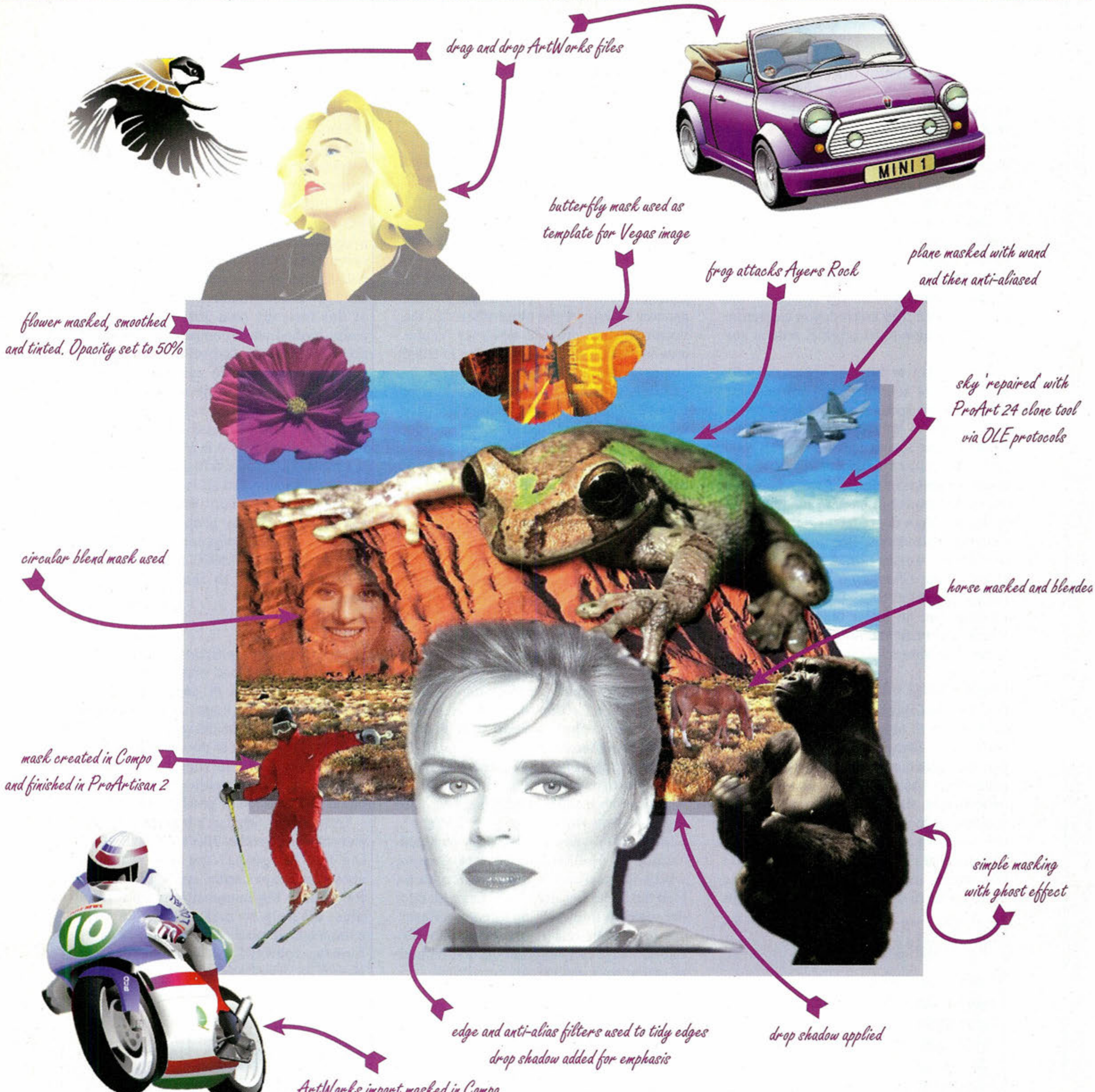
Pros: Allows bitmaps to be layered to generate a final image • Excellent text and mask handling offering full control over the appearance of the final image • Any operation can be undone • Good value

Cons: No virtual memory • Risc PC only • Bitmaps and masks must be edited in a separate bitmap editor



Importing vector files. Non-rectangular files are backboarded with white but the solution is easy; create a mask.

Composition



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Acorn's World of new technology

Acorn reveals its plans for Technology City at the Acorn World show in October.

Technologically speaking, there's rarely been a more exciting time for Acorn. The company has so many projects on the boil – both in the area of personal computing and interactive television – that it's all most people can do just to keep track of them.

For this reason, Acorn's Technology City stand at the Acorn World show will be an unmissable event for all Acorn fans. Current technology will be explained, and future projects revealed. Many features are being kept under wraps by Acorn until the show – you'll have to turn up to find out about them – but among the attractions will be:

- The new Risc PC 700 and A7000 models; the first chance for most people to get their hands on the new machines.
- A great new product which – quite literally – combines the best features of RISC OS and Windows [what 'best features of Windows'? - DM].
- The chance for concerned parents and teachers to ask practical questions about multimedia as part of the Risc PC system.
- The multi-processor card from Simtec.
- A strong networking feature, tying in with the theme of the show. *Omniclient* will be shown running in conjunction with an Acorn SchoolServer, and *Access* and other network protocols will be running on Risc PCs.
- A Risc PC 700X will be shown running X-Windows.
- A special Clan member's area with an Acorn Rocket Ship to try.
- The recently-released Taos operating system for the Risc PC.

Technology City will obviously be a Mecca for enthusiasts, and should also be on the itinerary of any Acorn owner who wants to unlock the potential of his or her machine. AU

Cruise the Internet with Blue Peter

Acorn World '95 is the place to get bang up-to-date on the phenomenon referred to as the Information Superhighway, through both its more usual meaning of Internet access and the exciting new Acorn set-top box technology from Online Media.

You'll be able to get online at the Cyber Café – your 'hands on' chance to find out what the Internet is like. Then, if you like what you find, there will be a full Internet package on sale from Argo Online (see the offer on page 38 of this issue) at a very special show price, so you can sign up there and then. This package will give you an Internet account, a modem and the software you need to access the Internet, all set up specially for you.

As if that weren't enough, Acorn World will have a link with the *Blue Peter* stand at the BBC Big Bash at Birmingham NEC. Visitors to both shows will be able to talk to each other over the Internet. *Blue Peter* will be covering the link as part of its feature on the BBC Big Bash that weekend, so if you come along on Friday afternoon you may even be lucky enough to spot a *Blue Peter* presenter.

There is a special theatre presentation by Clan Acorn's Chris Cox to answer all your questions about the Information Superhighway, and Acorn's place on it.

Online Media will have a large presence on the main Acorn exhibit, where the pioneering Cambridge trial will be re-created, and will also be giving a theatre presentation.

So, whether you are already on line, or just want to know if the hype is justified, the place to be is Acorn World.

Joint Clan membership/show entry offer

For anyone who missed *Acorn User's* exclusive offer in the August issue, here is a reminder that we are offering the chance for you to join the Clan *and* go to Acorn World all for the knock-down price of £15. For this, you get a ticket to Acorn World on the day of your choice, and full Clan Acorn membership including the Clan pack with exclusive T-shirt, Risc PC lapel badge, Clan mouse mat, discs packed with software goodies and up-to-the-minute technology briefings. For a further £5, you can buy the limited-edition Clan sweatshirt.

To take advantage of this offer, complete the form below and return it along with details of your name, address, postcode, home and work phone numbers and – if applicable – e-mail address to:

Acorn Off-Line, 13 Denington Road, Wellingborough, Northamptonshire NN8 2RL. The offer is limited to one ticket per membership.

Please send me .... Clan Acorn pack(s) and a ticket/tickets for Acorn World (one per pack). I enclose a cheque/postal order for £15 (£20 for sweatshirt as well) per pack made payable to Acorn Direct.

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The next phase

Jack Kreindler examines a top of the range dye-sublimation printer.

Of all the printing technologies, continuous-tone printing yields the finest results for photographic imagery, and one of the most outstanding examples of such printers is the Tektronix Phaser 440. Before I get carried away, I should mention that this dye-sublimation device does cost a little more than your average £1000 laser or wax-transfer cum entry-level dye-sub printer. The 440 weighs in at £6000; that's with the recommended 32Mb RAM but with room for a further 32Mb which would set you back an additional £2985 + VAT.

This printer is about as light on the scales as it is inexpensive. At 21kg it certainly gives your vertebrae something to think about. I know; it nearly sent me hobbling to the osteopath. The grey box houses a 300dpi printing head which can generate continuous tone images up to a size of A4 letter with bleed and cropmarks. It also contains the motherboard with up to 64Mb of RAM and a CPU – a 20MHz RISC processor. Every kind of communication standard is supported, including SCSI, AppleTalk, parallel and serial. Running directly from the Acorn via the good old parallel cable presented no problems at all.

The Phaser 440 certainly ranks in the premier league for rendition of photographic imagery. The printer is Pantone-certified ensuring spot-on spot colours and accurate tones and gradations. Comparisons with Canon BJC-600, Epson Stylus Colour, and Fargo Primera printers showed the significant advantages that the Phaser has over other technologies and lower end dye-sublimation printers.

Colours were very vivid and the results stunning. The registration was infallible and colour-matching was superb. With a resolution of 300dpi, the Phaser is able to retain all the information of a 24-bit 800x600 dpi image within an A8 area (1/16th the area of A4). This enabled me to proof 16 retouched images, 800x600 pixels in size, on one sheet of oversized A4 letter paper, without the loss of any pixel information. This is extremely useful to the designer and astonishingly impressive for the client.



A typical printout, magnified four times linearly. Quality is excellent, but it should be for over £6000.

Anything from full-colour A4 magazine covers with bleed and cropmarks to the simplest of letterheads can be instantly and accurately proofed. Black text quality at 300dpi is the same resolution as an unenhanced 300dpi laser and there are no drivers for the Acorn which facilitate anti-aliasing of vector graphics and text. Therefore, monochrome text at type sizes smaller than 14pt appears stepped on curves and angled lines.

However, it is colour accuracy that is the magic of dye-sublimation printing. A printer with effectively four billion differently coloured inks on board can print graphics or text of any colour in a 32-bit range as a 300 dpi spot colour with no horrible halftoning to be found. In any case, colour proofing in DTP is much more concerned with colour accuracy than resolution, and considering the enormous cost and, more importantly, time benefits seen using the Phaser compared with a chromalin machine, it is no wonder that so many publishing and repro houses are buying dye-subs for proofing their work.

However, if you are a designer who does not only use a printer for colour proofing before going to press but also as a means of generating superb quality final output, then resolution is of great importance. It is for this reason that the Phaser cannot yield as impressive a result from vector graphic imagery incorporating fine lines, curves and text as it can from bitmaps. There is a way round the problem – just buy a PC card and *Xara Studio* (Computer Concepts) and print out the graphic as a 300dpi anti-aliased bitmap.

Printing small vector files is very rapid, but pumping huge bitmaps down the parallel cable does take time. However, once they have been sent, the level II RIP magically turns big sprites into printable info quite swiftly. The speed of printing once the file has been rendered is extremely fast at approximately two minutes for an RGB image and three for a CMYK print. This makes the Phaser one of the fastest systems money can buy and, with background printing on the Acorn, the Phaser doesn't burden single-workstation setups too much.

The cost per page is the same at £2.50 whatever the image you print, which is less expensive than it was a few years ago. Of course, this cost is prohibitive for the lower end user and the unit itself may be beyond the reach of most small design houses. However, finance permitting, I recommend the Phaser 440 as probably the finest A4 proofing and very short run colour-printing device in the world under £10,000. It would be an invaluable business asset to many repro houses, designers and photoretouching centres nationwide. AU

Product details

Product: Phaser 440 colour printer
Supplier: Tektronix
Tel: (01628) 486000
Price: £6295 + VAT

Pros: 24-bit colour at 300dpi • Excellent colour matching • Very fast
Cons: No anti-aliasing

Club Corner

Chris Jackson talks to the Suffolk Acorn RISC Club about their regular meetings and newsletter.



The Suffolk Acorn RISC Club's monthly newsletter keeps members up to date on events.

This month I have decided to go back to the more traditional style club who hold regular meetings and seem in abundance around England, and I have chosen the Suffolk Acorn RISC Club (SARC) to take the limelight. The club was originally set up as the Ipswich Acorn User Club, but was renamed the Suffolk Acorn RISC Club to reflect the fact that many of the people who are in the club come from all over Suffolk rather than just Ipswich.

Originally proposed by Andy Keeble, two founder members – Tracey Constable and Paul Skirrow – immediately helped him set the club up after seeing a message on Fidonet. After discussing the club's future and how it could best serve the local Acorn 'community', they contacted as many people with an Acorn computer in the area as they possibly could, which resulted in 20 people at the first meeting and a brilliant start to the club.

After the very successful first meeting, it was decided that the venue had to be moved to somewhere larger because of the number of people interested. Paul decided on the local church hall, but to his great surprise a ladies' sewing group in the next room drowned out the computer users' chatter, and very quickly they decided to move to the Ipswich central library. This turned out to be very much quieter, and also offered many more facilities such as an overhead projector.

Paul, the chairman, tells me they always try to have a major feature at each meeting to attract as many people as possible. In the past, the club has had features on the Risc PC, the Internet and the 486 PC card to name but a few.

In June, Chris Cox (from Acorn) talked about the future of Acorn and its products, and at the July meeting Chris Pitts (from Online Media) talked about the benefits of the Acorn-based set top boxes. Other well-known people from the Acorn scene will be hosting presentations in the future on a variety of interesting subjects. The club has hosted bring-and-buy sales and a game-playing night at Christmas time; both proved to be very popular for both the adult and child members of the club.

As a result of the number of activities and types of presentations, the club now has around 50 members, and is growing steadily. There are usually at least 30 people attending each meeting.

Rather than just concentrating on being a club for enthusiasts, the SARC tries to cater for users at all levels, from beginner to techie. It has a broad membership which is evenly distributed between home users, business users, teachers and students. The type of equipment each of the club members has ranges from A300 series computers to 26Mb Risc PCs, which definitely shows that the club has a wide range of users.

The club sells blank discs and PD discs which cost 35p and £1 respectively, which is much more reasonable than any equivalent Acorn PD library can offer them for. In the past, coach trips have been organised to the Acorn World shows and a summer barbecue has been hosted by the club. These have proved very popular, so there are plans to host more trips and activities in the future.

The SARC meets at the Ipswich Central library on the second Thursday of each month at 7pm, with talks starting at 7:30pm; they then move to a local pub at around 10pm. Membership costs £15 per year for single members, and £20 for family membership, with some special discounts for students etc. For this, members receive a monthly newsletter which arrives a few days before the meetings. This contains very useful information on what will feature at the up and coming club meeting. AU

The Suffolk Acorn RISC Club
Chairman: Paul Skirrow
Address: 9 Randwell Close, Ipswich IP4 5ES
Tel: (01473) 728943
Fax: (01473) 270643
E-mail: SARC@octopus.anglianet.co.uk

Contacting me

I would be interested to hear from any Acorn-oriented clubs throughout the world (especially foreign clubs) to cover in this article. You can get in contact with me by e-mail at Chris.Jackson@northarm.fidonet.zetnet.co.uk, via my own BBS 'The Northern ARM BBS' on (01274) 530831 (upto 14k4), RiscNet#7:44/101 or post at The Club Page, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP.

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A new class **of machine**

Geoff Preston looks at the possible impact of Acorn's new computers in education and for networks.

I hope you will forgive me if I appear to be apathetic about Acorn's new computers. I'm not, really. But I do have a hard time enthusing over the finer points of a computer – however close to the cutting edge it may be – when, after all's said and done, it's still only a computer. Probably rather more significant than the new computers is the new operating system, which if you intend creating a network will be of special interest.

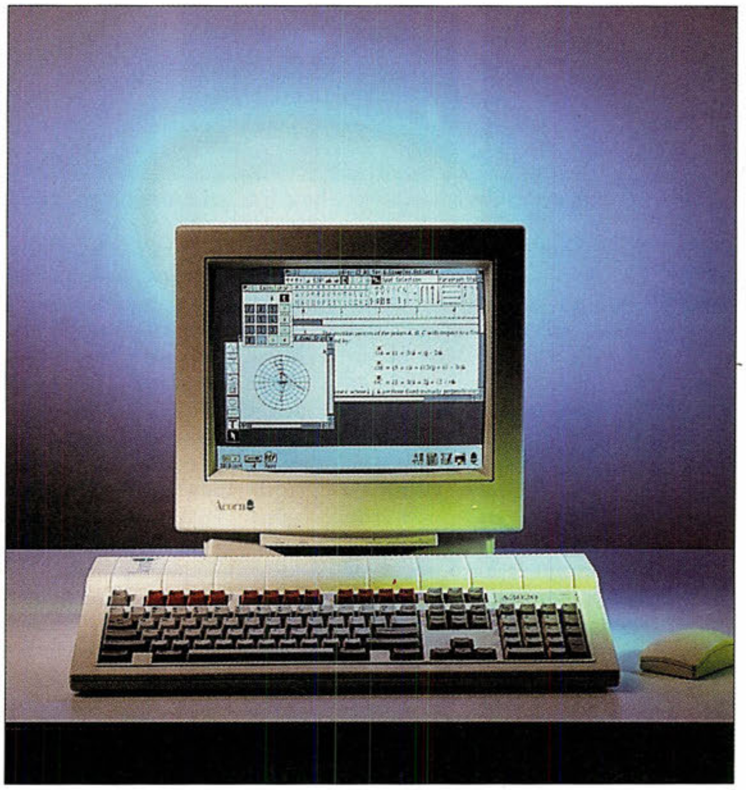
RISC OS 3.6

The latest implementation of RISC OS, and the version installed in all the new computers, is version 3.6 which was designed specifically to run with ARM 600/700 processors. Unfortunately, this fact means that anyone with ARM250 or ARM3 computers (or less) are stuck with version 3.11. There are several minor improvements over version 3.5 which was fitted to the original Risc PC 600, but also two major improvements which will conserve RAM and possibly increase speed. The new operating system includes network software which means that now all you need are network cards and some cable and you can build a network. Because the software is in the OS ROMs, and actually runs from ROM, precious RAM is not used, unlike software on network card ROMs which gets dumped into RAM before running.

A spin-off from this is that, since the network software is in ROM, there will be no need for it on the network cards, so I believe the cost of network cards for the new machines will be significantly reduced in the very near future. I don't feel inclined to predict exact figures, but I can see no reason why the cost shouldn't be nearly halved from the current price of between £100 and £130.

Another spin-off which will cut down the initial cost of networking is the fact that you will not need to budget for 4Mb of RAM, as would be the case if using RISC OS 3.5 or less. Now more than ever, networking is a viable option and, in my opinion, the way forward for all schools.

Another RAM-saving feature is having *Printers* in ROM. Like the network software, *Printers* also runs from ROM and uses only about 50K as opposed to 256K+ when loaded from disc into RAM. As anyone who uses a network will confirm, *Printers* is not the best program to haul across the network and having it installed locally will certainly be welcome. Of course, the printer definition files will still need to be installed from the network into RAM (in much the same way as *Alarm* files do now), and this is one of the reasons why on power-up the new computers must see either a hard disc or a network.



Acorn computers don't become outdated as quickly as some other systems. The A3020 should not be consigned to the scrap heap yet – in fact, schools should seriously consider buying more of them.

A7000

Just over a year after the launch of the Risc PC and the demise of the A5000, Acorn has just released a new computer (with several variations on the theme) and revamped the Risc PC with faster processor and several other goodies like improved sound.

The new A7000 is more or less a cut down Risc PC but without the second processor support, without VRAM and with less expandability. It effectively replaces the A5000 although its price will probably

make it the mainstay of education, being similar to that of the A3020 before the dealership policy change. It is a superb machine, of that there is no doubt, but before rushing out to buy some, read on.

I'm not going to get involved in discussing the pros and cons of the clock speed and colour support in this article. If you feel you need to know that information, it's outlined in last month's *Acorn User*. What I will say is that as a student workstation it provides as much power as is likely to be needed for several years and probably into the next century. In fact, it's probably a good deal more powerful than is currently needed for the average secondary school student. In my experience, an 11 year-old using *Impression* on a Risc PC doesn't generate significantly more text than when using *Wordwise* on a BBC B.

Having said that, there are other things to do with a computer and new applications will become available which require more power. In particular, graphic handling will be much easier on the new machines, but is the amount of work of that type going to justify the higher price that the extra power will demand? Compared to an A5000, which finished its life with a price tag of £1200, the A7000 looks good. But it's a good deal more expensive than the new price of the A3020.



The A7000 is an excellent machine but will schools be able to use it to its full potential?

I'm perhaps being devil's advocate here, but I can't help feeling that people still buy computers in the same way as they buy hi-fi; they choose the models with the highest numbers attached to them, regardless of whether or not those numbers are really needed. Now, there may be several people about to write in saying that this is a short sighted approach. But is it really? When school budgets are tight, I feel there is a case for waiting until the extra power really *is* needed, and then buying at what by that time will be a lower price. How many teachers can honestly put their hands on their hearts and say their students routinely run A3020s in 'top gear'?

What I will say is that the A7000 will make an excellent fileserver – probably better than a Risc PC which would be largely wasted if devoted to such a task. Those who use an A5000 as a fileserver would be well advised to consider upgrading to an A7000. The new filecore in RISC OS 3.6 will support hard discs of greater than the current 512Mb limit without the need for clumsy partitioning.

What else is on offer?

Continuing on the network theme, one of the variations of the A7000 is the A7000 Net; a network station which comes without a hard disc but with a network card installed with both 10Base2 and 10BaseT connections. This is fine provided the network card supplied is of the type you want. If you currently use i–cubed cards with *AppFS* on board (*AppFS* being a high speed application server) then this option may not be so attractive. The network station has 2Mb RAM soldered onto the motherboard, with a SIMM socket capable of holding a single SIMM of up to 128Mb. Those using networks will be aware that stations with less that 4Mb RAM have great difficulty functioning. As the A7000 runs most of the network software from ROM as already stated, there isn't the overhead, so the 2Mb machine will function adequately.

But beware; there is only one SIMM socket, so the first upgrade will have to be discarded if you want to add more memory later. It's unlikely you'll need more than 4Mb in the short term (which will give a total of 6Mb with the 2Mb already on board), but to make this investment really future proof, I suggest you consider an 8Mb upgrade which will give a total of 10Mb – which should be more than enough for many years to come.

The A7000 is a machine which will do a fine job in the classroom. However, it is worth noting that there is still a lot of life left in the A3020 and A4000 and they will both still be available at a good price for the foreseeable future. Schools may find it difficult choosing between A7000s or a greater number of A3020s for the same price. For what it's worth, I'm replacing my fileservers with A7000s and adding to the student stations with A3020s.

Risc PC 700

This again seems to me rather like adding additional power to a rocket ship that already far exceeds the amount of power the average user in school is likely to need. Anyone thinking of using a Risc PC 700 as a fileserver is certainly wasting their money, especially if they are using 10Base2 networking. Balancing the benefits against the cost, I feel it would almost certainly be better to buy two A7000s and provide two fileservers rather than a single Risc PC. If you go down that route, you won't have the expandability of the Risc PC, but for a fileserver you don't want it running anything other than the fileserver software. In this case, the lack of expansion capability isn't an issue.

These are both excellent computers and more than a match for the opposition, although I'm not sure whether the general standard of Information Technology in schools at present will be able to exploit them to the full. AU

Letters

A7000, MPC beater

'What has been going on at Vision Park?', you asked in your August issue. In the same week the *Times Education Supplement* provided my answer, as will *Acorn User* by now: the A7000.

It's been a long time coming, but it looks quite good, doesn't it? Quite a lot like those MPCs that are becoming commonplace at Comet and the like. Why then (given the obvious selling points) are these machines not for sale in Comet, Dixons and the like? Because Acorn closed its retail division at about the same time all the other PC manufacturers were beginning to reap the benefits of the home market.

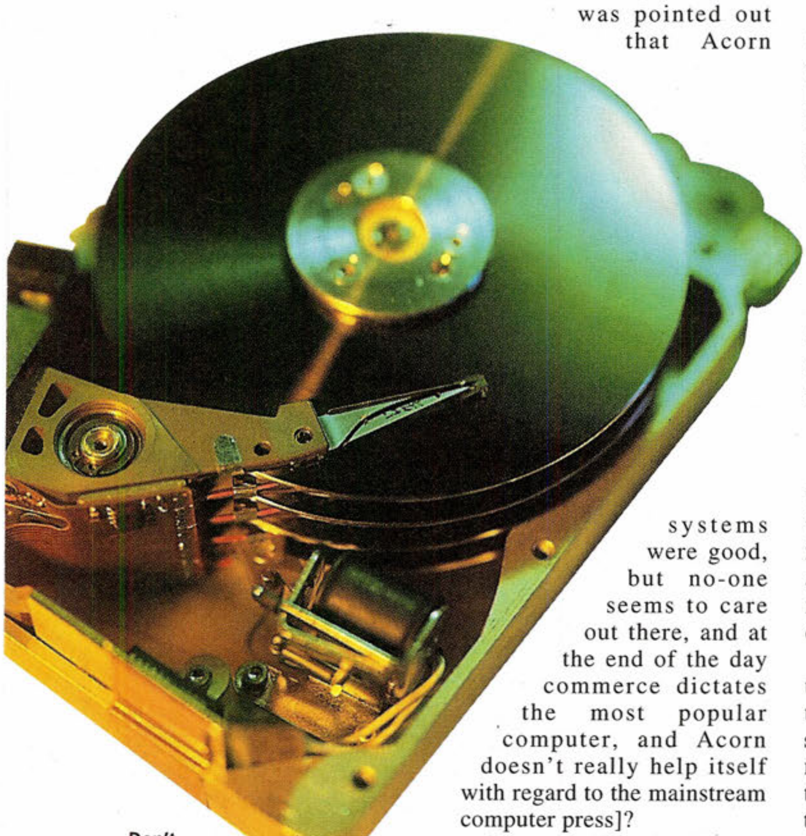
Acorn is a company that could do really well in the home market, especially as many families would go shopping for a computer and the Acorn would be instantly recognised by the child. The A3010 was never going to work – the bottom fell out of that market, resulting in the collapse of Commodore – but the A7000 looks very like the rest of the new wave of MPCs, with one obvious advantage: the kids already understand it.

Adam Juniper
Somerset

See Viewpoint.

Chill out

How about printing the enclosed reply from the editor of *Computer Shopper* to the letter of an over-zealous Acorn fan [in which it was pointed out that Acorn systems were good, but no-one seems to care out there, and at the end of the day commerce dictates the most popular computer, and Acorn doesn't really help itself with regard to the mainstream computer press]?



Don't pay through the nose for a new hard disc, shop around in the PC market instead.

My own view is that we Acorn enthusiasts have got to cultivate a more relaxed identity for ourselves. We seem to be the fretting underdog, hoping for the day when the rest of the world will see the light. We're very uptight. Better to simply view ourselves as a gnostic elite, leave the masses to labour under their ignorance, and relax.

Another point of interest: in July's *Moxon Interview*, Quentin Pain held out the hope that when children left school they would want to use the same computers they were using at school. Well, if they do they will largely be using PCs since, unless I'm mistaken, the large majority of secondary schools are using PCs. Not only that, even those pupils who do use Acorn computers tend to hold the view that when they leave school they will graduate to using adult computers, just like the ones mum and dad use at work. It would be very interesting to find out how many of your readers are using Acorns because they used them at school: I'll bet it's not that many.

And finally, I was thunderstruck to read in *PCW* the following: 'The major problem is that most bureaux are set up for Macs and will moan if you so much as utter the phrase "PC"; they can, in fact, handle PC formats, but will give you grief about it.' Amazing: users of the platform which has cornered 80 per cent of the computer market have as much trouble getting a file printed through a bureau as an Acorn user!

Alan Muscat
Manchester

They probably have more trouble: these days, printing to PostScript file from an Acorn is surprisingly reliable, at least in our experience.

On the subject of Acorn users being more relaxed, I totally agree. Sometimes we seem to lose sight of the reasons we use Acorns in the first place: because they're so pleasant. So if you're going to Acorn World, be sure to wear a flower in your hair...

And incidentally, I used a Beeb at school which is probably why I'm still an Acorn user. But those were the days when most secondary schools had Acorns, not PCs. (MM)

Cheap hard discs

I am, quite frankly, amazed at the price of hard discs in the Acorn marketplace. At one point in the August issue you mention, quite rightly, that 500Mb discs are approaching the £100 mark. Yet, later in the same issue, Bill Lamin is encouraging schools to buy bare 80Mb hard discs (just the disc, no interface) for £89 including a 'discount'. Any school would be far better off going to a hard disc supplier and getting a disc four times as big for their money.

This pricing, however, is typical in the Acorn market. ICS, for example, will sell you a 420Mb hard disc kit for £275 + VAT. The price you would expect to pay for a bare 420Mb hard disc from flicking through a magazine such as *PC Mart* is about £109 + VAT. That's nearly £200 for an IDE interface that typically costs £20 in the PC marketplace.

My advice to anyone thinking of buying a hard disc upgrade is this. Decide which interface you want to buy (Watford Electronics and ICS, among others, sell IDE interfaces for about £70 inclusive), but make sure the software has been upgraded for RISC OS 3 and that the interface supports features such as background Filer operations. Next, buy a PC magazine and phone around for the best price on the disc you want. Bear in mind that while Acorn suppliers are quite happy to flog you an 80Mb disc for £100, these devices are now obsolete in the real world. Expect to pay from £120 for a 420Mb disc, to about £200 for a 1Gb disc.

Then comes the installation. I can honestly say that using a hard disc from a different supplier is no more difficult than one from an Acorn dealer. The only difference is that you will need to run the formatting program supplied, taking about two minutes. You will need a mounting bracket (costing about £5) if this is your first hard disc, but if you are upgrading from an older ST506 drive you can re-use the bracket from that.

Then comes the real difficulty. You have the arduous

task of deciding what else to buy with the £100 or so you have saved.

E P Avis
Exeter

A couple of points. Firstly, if you buy a drive bigger than 512Mb you will need partition software to use all the capacity: ICS sells the Wizzo filing system which does just this. Secondly, things will be slightly more challenging if you are upgrading an A3000 or A3010 because you will have to hack around with power lines and space constraints. Ideally you could make the drive external, but you can't get external IDE drives to work reliably enough. That's the price for DIY: it costs less, but it might not work. You have been warned. (MM)

Gimme games

I have been playing lots of Archimedes games and have found one particular game that is out for the Amiga: it's called *Syndicate*. It has great game-play and I was hoping it might be possible to contact conversion houses to get the rights to convert the game.

I'm recommending this game for conversion to the Archimedes: is anyone doing it?

Tom Welsh
Devon

Well, not that we know of. I don't want to put a downer on the Acorn games market, but as we have found out over the summer, games are not the most prevalent packages on the Acorn platform. Not at all. Conversions are especially awkward – Eddie Edwards has an almost complete conversion of the PC classic *Doom*, but has worked out that it would be uneconomic to release it because of the licensing costs. He did *Wolfenstein 3D*, so if anyone knows, he does.

For example, one big games manufacturer has realised that education titles sell much better, and that's where all its effort will be going in the future, thank you very much. Acorn is concentrating on selling into schools and no longer considers games a priority, which it did when it launched the A3010. Games sales aren't great on the Acorn platform – bar the odd good seller – which explains why we aren't flooded with conversions, yet games are the most popular software purchase, according to our reader survey. I don't get it, either. (MM)

Major downer

Maybe I'm just a pessimist, but I do wonder how long Acorn will survive as a computer manufacturer, or will it come under pressure from Olivetti to make a profit and stick with the ARM side of the business?

I'm negative because: (1) We've lost one of our Acorn magazines; (2) We have no retail presence through Argos, Dixons, John Lewis etc.; (3) HMV stopped selling Acorn software; (4) Acorn has announced a profits warning; (5) Whatever happened to ZCL, the distributor?

We're small and getting smaller. Remember, Apple is considered a 'minority' machine, so what does that make Acorn?

What do you all think? No death threats, please!

Brian Ferris
London

Personally, I'm taking Alan Muscat's advice, and looking at the Acorn market through rose-coloured spectacles. The fact is that through rose-coloured spectacles the whole world is red, not just Acorn's financial reports.

Besides, I have a bit of faith in Acorn's new plans to push its machines. As the marketing strategists are the first to admit, if Acorn doesn't sell more machines through the new dealer system it's history, but at least the company is actively trying to get out there and sell against its competitors. Good luck to them. (MM)

Viewpoint

So, we've got another member of the Acorn family. The inspiringly-named A7000 might not be the technophile's idea of a dream machine, but it's an important indication of Acorn's attitude to its marketplace and its future.

The A7000 is aimed fairly and squarely at the education market. It's been designed to withstand seven years in a classroom; it's been made network-ready; it comes with a CD-ROM option... these are all considerations for schools, not the home. It also sits above the A3020 and A4000 in the range – these two haven't been discontinued because there is still a demand from schools. The A3010, the machine that was supposed to persuade the huddled masses that Acorns can cut the ice in the home entertainment market, has been dropped and no more are going to be produced.

So what is going to happen to all the home enthusiasts out there who don't go to school and aren't that bothered by Key Stage ratings and the intricacies of the National Curriculum? Well, nothing. The A7000 is an excellent *home* computer as well, comparing favourably with typical multimedia PCs – it's just that Acorn isn't trying to push anything in that area. At long last Acorn has realised what we've all known to be true for some time: it makes its money from the education sector, and if it lets it slip away, it's goodbye Acorn. The new dealer network is an admission that schools are *the* market for Acorn, and the boys from Cambridge aren't going to rest on their laurels while Research Machines and Apple slink into secondary schools and sell their wares to unsuspecting boards of governors.

But if you're one of those people who looks at *Acorn User* and avoids the education section just because it says 'Education' at the top of the page – which would be a mistake, as some of the most interesting articles we carry happen to come under this banner – don't panic and think you're going to be forgotten in the rush to sell computers to schools. What's good for education is, most of the time, good for home users too, and a safe marketplace like Acorn's presence in primary schools is the sort of set up other computer companies would die for. It provides stable income and a loyalty to the brand that you don't get from the business and entertainment markets, and that can only reflect well on Acorn and its machines.

There's another side to the A7000 launch. Some people are not that impressed by the technological aspects of the launch, not because the machine isn't powerful but because it is predictable. The A3010, A3020 and A4000 are slow by today's standards – but, at the price, are more than suitable for running education software – and the progression to the ARM7500 is an obvious step. The other advances, like 16-bit sound and an improved Filecore to access drives bigger than 512Mb, are really fixes for omissions from the original Risc PC design. The inclusion of an ATAPI interface *is* a big step forward, though it's too early to see how important it is, as ATAPI is still in its early days as a selling point.

But this isn't the point. The A7000 fills a gap in the Acorn range that appeared when the A5000 disappeared, and it fills it well. Acorn is continuing to develop new machines, is continuing to enhance the operating system, and is pushing areas like the Information Superhighway and networking with vigour, so anyone looking at the A7000 and thinking that Acorn is no longer designing the cutting-edge technology personified by the Risc PC is wrong.

Sure, things aren't all rosy. Acorn's managing director has resigned, and a number of dealers are pretty dismayed that they aren't among the 25 agents who now represent Acorn's most important selling force. Pessimists point at this, at Acorn's financial results, and the release of a machine that fills a gap rather than pushes the technology forward, and deduce that Acorn is going down, and fast. Yes, *Acorn User* is going to be biased, and it's going to be optimistic – a criticism easy to level at any publications in niche markets like this one – but the signs from inside Acorn are more to do with change than disaster. No-one likes change, but if it produces a healthier marketplace and more machines, it sounds good to me.

Mark Moxon

COMING SOON

A survival guide for parents

Sue Cook

Ex-Crimewatch presenter Sue Cook has strong views on family computers

The biggest day of your life

The first day at school is more traumatic for parent than child

National Curriculum – help or hindrance

What does it mean to your child?

Number crunching

Helping 7-11-year olds with their maths at home and school

Spoilt for choice

We gave one family £1,500 and told them to buy a computer

Competition

Three top-of-the-range CD-ROM drives to be won



FIRST ISSUE ON SALE 24 AUGUST

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GAME SHOW

Welcome to another edition of the Game Show, and our special guest this month is none other than Tom Cooper – better known to many of us as Berty, the author of *Hamsters*, *Wavelength* and *Ixion* to name but three. VTi is preparing to release *Darkwood*, Tom's latest game, at the Acorn World show and I've been chatting to him about it:

How did you become involved in programming in the first place?

'Hey, that's not fair, I was only about seven! Maybe I was bored, I don't know. Blame it on my brother – he bought a computer. I was happy playing *PacMan* on my Atari console.'

What was the first game you wrote, and which language do you prefer to work with?



Tom's all-action shoot-'em-up, *Wavelength*, packs a lot of firepower.

'My first ever game was a version of *Lunar Lander* adapted from a listing in a Spectrum magazine, but my first *real* games were written on the Beeb. I managed to do four big games in machine code, and they were all cruelly rejected – I like to think it was because the BBC was on its last legs, not because my games weren't any good. On the Archimedes, my first game was written with Neil Topham, a friend from my sixth form, and that was how I learned to program in ARM code. I actually prefer Assembler to anything else – even BASIC. Aside from C there isn't anything else really appropriate for writing games. After having written so much of it, I tend to find it more natural to program in ARM code. Besides, bugs in BASIC don't crash the computer with quite the same style...'

What sort of setup do you use to develop your software?

'Well, my only computer is a little 2Mb A3000 which has been used to produce everything up to the start of *Darkwood*. I didn't even have a monitor – I was ruining my eyes with a portable telly. I'm now using a borrowed A5000 with a couple of hard drives, a nice monitor and a lot more memory, basically because I refused to write *Darkwood* on anything less. I have to say that this setup plays *Hamsters* much better.'

Which of the games that you've written do you like the most, and why?

'It has to be *Hamsters* – must I spell the reasons out for you? Actually, I'm an animal lover and I'd never hurt a fly. I even resisted the temptation to buy a brick and a mouse to sample the squelching noise; I'll let you wonder how I recorded that one. It's probably the only game I can still play for a laugh after having to playtest it for hundreds of hours while writing it.'



Where did that sheep come from?

What's your favourite game on the Acorn? Is there a game that you'd like to see converted?

'Well, I stopped writing *Darkwood* for a week to play *Dune II*, so I suppose that means I like it. To be honest, *Exile* on the Beeb still beats anything in my opinion – I got back into it recently and played it virtually to the end before getting stuck. I'd love a conversion of *Exile* but I doubt it will happen. From the more recent games around, I guess something like *Ridge Racer* would be nice over a serial link or network. I don't think we really have a great racing game right now.'

What do you think of the Acorn games market? Why do you write for the Acorn?

I think it's been lagging behind the PC market for a very long time and it may never reach the same standards. The only incentive to produce high quality games is to have them ported to the PC or the consoles and make large amounts of money in the process. This may push the quality up dramatically in the next year because we're starting to see people take notice of Acorn programmers. At the same time, the best games writers are being plucked off to write for other platforms and if there's no one to fill their shoes, the market will collapse. For the moment things are looking good, and if the Online Media set-top boxes take off, we'll finally have a native market worth pursuing.

'I write for the Acorn simply because I have one – to be honest I don't think I would have continued writing games on the PC having seen samples of its assembly language. The obvious attraction of the Archimedes is that it has an extremely friendly operating system and a built in Assembler – what more could you ask for?'

Could you give us a quick introduction to* Darkwood*? What makes the game so different?



Darkwood is almost ready to hit your screens, and the vector graphics are particularly impressive.



Tom's favourite game, *Hamsters*, gives the aliens a break.



Look out! He's behind you!

'Okay – here goes. It's a large arcade adventure involving a lot of puzzle-solving and even some shooty bits. What gives this game a new twist is that it's set in a completely three-dimensional environment, including scrolling, Gouraud-shaded patchwork landscapes similar to the ones seen in games such as *Zarch*, and non-scrolling single rooms which use a mixture of hand-drawn graphics and texture mapping. Another new feature is that of monster intelligence – characters will not be aware of you unless they can see you, but they'll investigate noises close by. This means you can hide behind objects to avoid fights or distract monsters by causing a disturbance elsewhere.

'There are a variety of characters to control – the main ones so far include a wizard, a jester and an archer. They've all got special abilities, and the jester has a wide variety of really bad jokes at his disposal. The wizard is your starting character – you meet the other characters on your way through the game.

'So far, it's taken me about seven months to write, and at the time of writing there are about two months of work to do. This may not sound very long, but when you consider that both *Ixion* and *Hamsters* took between three and four months each, it should give you some idea of the size of the game. The actual plot is still being worked on, but it's likely to revolve around having to save the kingdom from some vile curse. It'll almost certainly involve some poor, fluffy creature's demise as well. I think people like that sort of thing.'

How did you come up with the ideas for Darkwood*?*
'I'd wanted to write a vector platform game – I like platformers and thought they needed bringing up to date. I wrote a landscape plotter along the lines of *Zarch* and created a method of storing objects on a large 3D map. The game started life with a character based on Calvin from the *Calvin and Hobbes* books, as I was reading one at the time, and the wizard only replaced him fairly recently – once a vague idea of the plot had been decided upon.

'*Darkwood's* a little different to the other games I've written, because it's actually been planned. All the other games I've done have just evolved, but because of the size and complexity of *Darkwood* I had to design various elements of it at the very beginning. The game engine was written in the usual manner, though – I was wondering whether the style of game could actually be made to work. I was quite shocked at how good the results were, so I decided to put some more work in and create a game around it.'

Why do you hold a grudge against small, furry animals?
'I don't – I love them. Preferably with a little ketchup. This is with the exception of spiders, which I prefer to run away from, but then they aren't furry so that probably explains it. Anyway, I think aliens and nasty things get a really hard time in games, so I was just levelling the score a little.'

Have you got any plans for the future?
'I'd like to win the Lottery and retire to a small Caribbean island with good tennis courts. Failing that, I guess it's back to writing games. I do have a project in mind which is rather large to say the least, and it will take the *Darkwood* engine quite a lot further. I doubt you'll be seeing it for a while yet, and it's currently a bit of a secret. I've got no plans to write a sequel to *Hamsters*, but I was thinking of releasing a patch to turn the animals into babies...'

Ahem – well, that's all we've got time for, so my thanks go to Tom Cooper for talking to us. I'll have more of the latest games news next month – until then, keep on playing.

Steve Mumford


Darkwood features some particularly fiendish puzzles.

Fire and Ice



Ice: Cool Coyote in his native frozen wastes accompanied by a cute coyote puppy. All together now, Ahhhh . . .

Supplier: Time Warner Interactive
Tel: 0171-391 4300
Price: £24.95 + VAT

This is 'the best platformer since *Rainbow Islands*' – at least, that's what it says on the box. I guess you might have paused reading now to ponder the above statement.

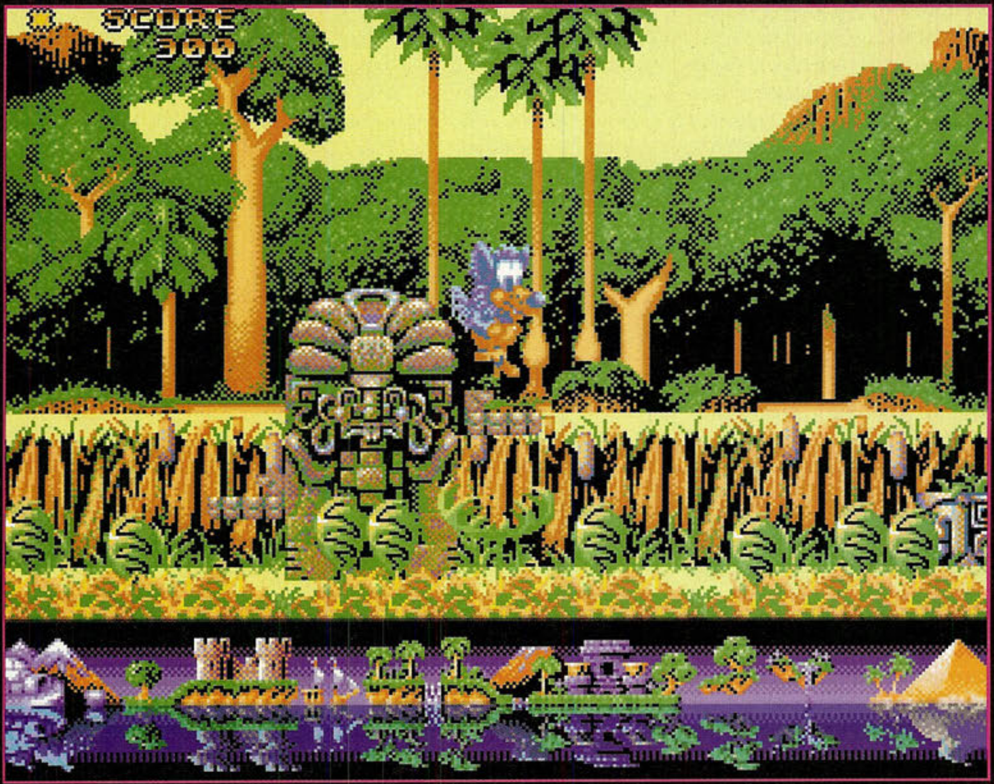
Firstly, do you remember *Rainbow Islands*? Nope? Well then, let's attack the problem from another angle. Do you own an Amiga? If the answer is yes you will probably have twigged that – once again – it's back in time for the humble Acorn market and for my time span; I'd say we are in the land of Disco when House Music seemed to be all the rage. This game is indeed dated and it's always easy to feel forgotten when the Archimedes instructions are printed on a loose piece of card, complementing the loading instructions for the Commodore Amiga and the Atari ST(E) (the Atari what?)

Well, *Fire and Ice* is indeed an Amiga classic and therefore is a damn fine platform, with everything you could possibly want in perfect place to set an exciting challenge. Even the story is quite engaging, and I found myself a little glossy-eyed at the thought of this rather fetching planet being at the mercy of some terrible sorcerer. Our hero – Cool Coyote – has been drafted in, not only to stop his planet from being taken over by the most evil being of all time, but also to stop the surrounding galaxy from getting much the same treatment.

It would appear the forces of good don't like us humans; we couldn't – as they put it – hero our way out of a paper bag, being too stupid and clumsy. Of course, the higher intelligence appears to have forgotten that this super-intelligent creature, Cool Coyote the chosen one, will be controlled by (you've guessed it) a human. Oh well, gods eh? Cool Coyote himself is a grinning blue animal with a spikey hairdo, so familiar that I'm amazed Sega hasn't sued for 'look and feel.' However, *Sonic the Hedgehog* for the Archimedes this isn't, as it simply comes nowhere near the pace of the Sega game, although it is quite a fun platformer.

At your Coyote's disposal are numerous weapons to use when confronted by enemies. The main weapon is a stream of ice pellets which cancels out the fire that the main enemy possesses. The immediate effect is to freeze the assailant, though more than one shot might be needed. Secondary and more powerful weapons can also be obtained and these range from metal discs to the bizarre 'sonic bark.' You can store quite an arsenal of special weapons, and it's great fun watching the effects.

Of course, no game of this genre is ever quite complete without the super weapon



Jungle: Leap nimbly over the fearsome snapping cabbages.



Title: Cool Coyote plays a merry jingle on his piano.



Undersea: Put on the diving goggles and snorkel and go fishing.

and certainly our cool friend has quite a little show up his sleeve with the snow bomb. To wipe everything out on the screen with this little number, just duck down and hold fire. To get yourself some of these treasured items just fire up at the clouds; pretty soon the clouds start snowing. By collecting these snowfalls you can have some serious fun. As you might expect, nothing is free and if you hang around an exhausted cloud for too long, it turns stormy on you and fires bolts of lightning in your direction. Other places that bear fruit are bonus ice blocks and some select crystal orbs.

The rules of engagement have been made quite simple for you, just freeze what you can and once it is frozen jump on it and shatter it. This applies to all moving enemies, though if you don't do the proper and violent thing by shattering the enemy promptly, it thaws out. The defrosted foe now has more immunity to your fire-power and sets about chasing you once more. Flying enemies drop from the sky when frozen and shatter on impact, while others reveal what they are carrying – normally keys of sorts which once collected help you progress through the levels.

Each of the countries you visit has been split into five basic lands and it does go without saying that, with Mario a contemporary favourite all those years ago when this game was created, there are numerous secret areas and level skips to explore. I have, however, been assured by players that you can visit all the locations, and that there are not one million possible endings like some games I have played.

To exit a level or land you must first locate an ice door then place the completed key within. The key's parts are in the hands of the enemy, and to make things a tad easier, the same creatures always possess the same part. Some land exits require no key at all – just jump through and you are off.

I should point out that this game is ever so slightly cutesy, and that the Atlantic and possibly Pacific connection has led to some lovely little Coyote puppies being added to the game. These adorable wide eyed creatures pack quite a punch, being almost indestructible as well as being so damn cute. They fire when Coyote fires and in some instances will even wander off to shatter the odd enemy for you. Look after these fluff-bundles because if you have them around you when the exit time comes they will yield extra lives if allowed to wander through.

As the game runs its course night and day will come and go; once seven days and seven nights have passed then the big evil guy, the Fire Wizard Suten, will start to loose his patience. From then on things will get progressively hotter and tasks will get more and more difficult to achieve. Extra lives can be obtained by symbol collection, by achieving certain high scores, or by keeping the puppies with you when you exit.

All in all a great game but, as I hinted earlier, just a tad dated. The implementation is certainly not up-to-date. I don't expect conversions these days to run letter-boxed (and fast) on the Risc PC, nor to return to the Desktop having eaten my font cache, but this one does. The conversion is only 16-colour, so the nice shaded Amiga screens shown on the box sadly aren't available, and although the program cunningly switches the palette mid-display, it doesn't always get the switch in the right place. Still, mustn't grumble – the Gordian Lock key disc protection system allows the game to be installed on the hard drive, and the high-score table can be saved.

Fun though it is, *Fire and Ice* is a bit of a 'filler' to keep the market alive until the next show. The last four or five months certainly have been the worst few months for games I have ever known, and if things keep on going this way the market demand for high-quality games is going to dry up as people sell their joysticks for something more useful, like an ornate mouse cover. Roll on the next show then (sigh).

Steve Atherton



Lightning: Stormy weather – Cool Coyote jumps to avoid getting fried.

RapIDE Fast IDE Interface

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RISC OS 3.1 software for Watford IDE board	£ 15
Replacement chip for use on A5000 machines	£ 8
External case and power supply for CD ROM	£ 79

Watch this space for other exciting new products due for release very shortly

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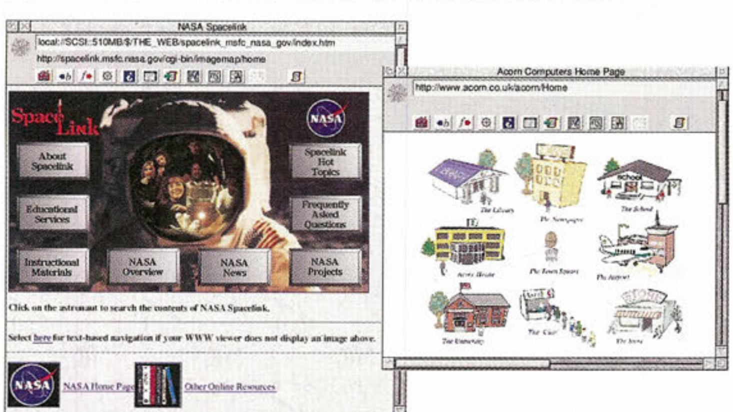
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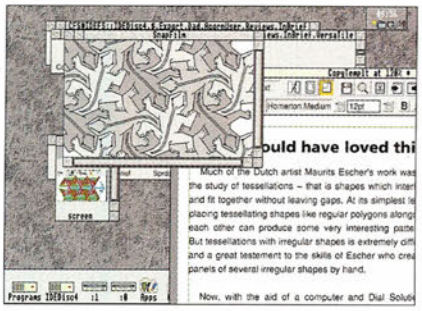
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A classic Escher design recreated with *VersaTile*.

Escher's delight

Geoff Preston investigates a tessellation program for mathematics and CDT.

Much of the Dutch artist Maurits Escher's work was on the study of tessellations – shapes which fit together without leaving gaps. At its simplest level, it involves placing shapes like regular polygons alongside each other to produce a variety of patterns. Such patterns can be either two dimensional, like some of the patterns created by placing ceramic floor tiles together, or three dimensional, like a modern football which is made up from a collection of hexagons and pentagons. But creating irregular shapes which tessellate is extremely difficult and it is a testament to the skills of Escher that he created panels of several different irregular shapes by hand.

Now, with the aid of a computer and Dial Solutions' *VersaTile*, generating these patterns – referred to as tiling – is much simpler.

The editor

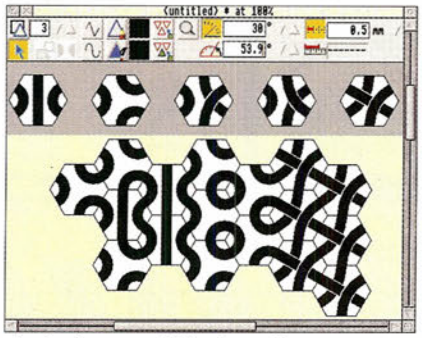
VersaTile is one of those programs that requires the manual to get started, but once you've got going, you soon realise it's a very easy program to use. The software will generate regular shapes with any number of sides and these can be placed on the work area and rotated, scaled and coloured as required.

Several different shapes can be placed together and the corner snap ensures the tiles fit perfectly. The corner snap is not a conventional grid lock, but a clever feature which snaps the corners of adjoining tiles together. In addition to the regular tiles, shapes can be drawn from scratch or existing regular shapes modified.

Output

The finished pattern can be saved both in *VersaTile's* native format which allows further modification to the pattern, and in *Draw* format which allows the pattern to be imported into other applications which support *Draw* files.

Included in the pack is a printer driver and a plotter driver which will enable students to draw their designs on cards using either a Plotmate, Graphtec or Hewlett Packard plotter. This is a particularly useful feature because it will enable students to create solid objects by creating the development (now called a net) of the object in *VersaTile*, plotting out the shape on card and then cutting out and folding the final form.



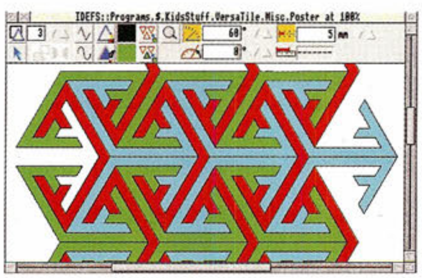
The five hexagonal tiles from *Tiling Generator*.

Support packs

As an addition to *VersaTile*, Dial Solutions also produces a series of support packs, the first of which is *Tiling Generator* – a collection of pre-drawn tiles, most having the additional feature of patterns drawn on their faces. When placed together, these not only create patterns in the joins, but the shapes on the faces also generate designs.

The pack includes the established seven types (five hexagonal and two square) produced by the Association of Teachers of Mathematics. Also included on the disc are some excellent worksheets and problem sheets in *Draw* file format, which also appear in the manual.

On this month's cover disc is a *VersaTile* file of a square tile containing a quarter circle. See how many patterns you can generate from 16 (4 x 4) of these tiles. For those who are not fortunate enough to own *VersaTile*, there is a *Draw* file of the same tile. This should whet your appetite for further investigation into this fascinating topic.



Complicated patterns like this can be drawn very easily.

Pricing

For an individual, *VersaTile* is very reasonably priced at £45. For schools, site licences are £100 for primary and £180 for secondary. These prices reflect the amount of development time software of this type inevitably generates, and I have to say, these prices are fair.

Unfortunately, I feel many will find better things to do with this amount of money. Primary schools in particular will have difficulty justifying a purchase which will effectively consume what for many will be their entire IT budget for a year. In view of this, I would ask Dial Solutions to reconsider their pricing, especially for primary schools. The additional *Tiling Generator* is £18 and includes a site licence. AU

Product details

Product: VersaTile
Supplier: Dial Solutions
Tel: (01132) 326990
Price: £45 (for site licences, see text)

Pros: Comprehensive features • Lots of possibilities for further investigation
Cons: Expensive site licences • A little tricky to get started

Turbocharging the Network

Bill Lamin shows some ways to speed up your network.

After 18 months of struggle, trial and much error, our Acorn network works reasonably well. Some of the steps we have taken may be of interest to other network managers. I must, however, offer a complete disclaimer. The ideas work on our school network. We have neither the resources nor technical expertise to guarantee that everything (or indeed, anything) will work on other systems The approach has been empirical. If it works, do it.

Improved reliability

Our main fileserver runs the *Level4*, *Gateway* and *AppFS* applications server. On power-up, the computer referred to as the fileserver loads *Gateway* first, *AppFS* second and *Level4*, the fileserver software, last. Any other order gives problems. I neither know nor care why.

Another important feature is that floppy disc drives don't appear on our system. As soon as a terminal hits the network, the boot routine reconfigures it to have no disc filing system and consequently no disc drives. If this isn't enough you can unplug the power leads. The boot-up sequence also sets the file server number, the filing system, unplugs *Configure*, sets the font cache and does anything else we think may help.

We have no viruses, no silly games, no pornography and no real problems. If pupils need to transfer files to or from home, they bring me their disc and I do the task.

Acorn experts helped us set up the system. They suggested a 500Mb hard disc would be adequate for our 1000ish users. The 500Mb hard disc was full in two months, with nothing much saved on it! The reason is that the Acorn Network builds in staggering memory 'overheads' that actually do nothing. Every user needs a copy of the *Scrap* directory. Each *Scrap* contains seven files when a user is first created. Every time a user uses a different station, the network creates a directory inside the user's *Scrap* directory. When the user prints from that station, an additional directory is created within the station directory. One student using and printing from, say, 20 different stations eventually creates about 50 directories and files.

We have 1000 users.

The crunch comes when you find out that each file or directory on a large hard disc gobbles up a minimum of 15K. The mathematicians are probably there already. 1000 x 50 x 15K = approx 700Mb just for all the *Scraps*!

What can you do?

The first thing is to clear out the *Scraps* regularly. This month's cover disc contains a scrap clearer that should recover a few hundred Mb on anyone's network. (We also found that our *Scraps* were used by some pupils to 'hide' files. This routine soon stopped that!)

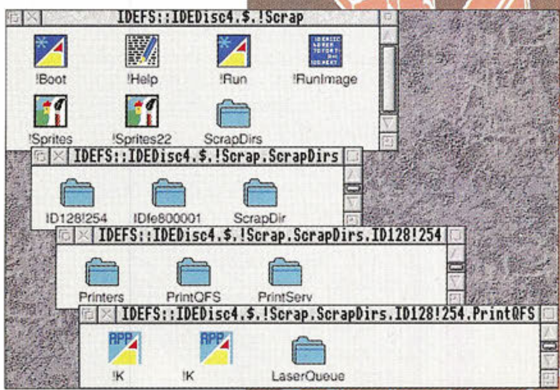
If you're really ambitious, you can try stopping your system creating these useless directories. All our users have is an empty *Scrap* directory.

As our machines boot from the Applications server, we add a couple of lines to the boot file:

```
Set Wimp$ScrapDir Net:&.!Scrap
Set Wimp$Scrap <Wimp$ScrapDir>.ScrapFile
```

All the *Scrap* sprites are merged with the *System* sprites so they are loaded when *System* is booted at start up.

An additional spin-off is that users no longer need a copy of *Armboot* to tell the machine where *Scrap* is. That's another 15K per user saved. Login time is dramatically reduced – from typing in the password to control takes around six seconds, reduced from 18.



The contents of one *Scrap* directory after printing from two stations.

We told Acorn networking experts about all this a year ago and they forecast dire consequences. When pressed, they quoted the example of a user being logged in at two stations and printing from both at the same time. They thought this may give the spooler problems – we decided to risk it, but you have been warned.

We run *Advance*, *Pinpoint*, *Poster*, the entire *Design Processor* suite including *Genesis*, as well as countless other applications and, in 15 months, have had no problems. With these simple modifications, it appears we can store all our pupil files on the 420Mb IDE drive – it still has over 100Mb left after 18 months.

I must acknowledge Chris Johns of Room J Software. He has helped enormously with the network developments and has checked my text for any idiotic bits.

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Laser Square Black
Andromeda Charlie
FLINTSTONE Conaith
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Chalk FIRE WATER
GLOB JAZZ SEVES & WOOSTER
BLACK ADDER II Vampires
GREEN Rain BONES
First Words Royal Crest
Birthday LOMBARDIC
Gezeele Paganina
Creedmore BENNY
KUNG FORGE Chopin
Beatville MANIA
DINER rabbit ears
ARB Medusa SPARK
ANTIQUE Fundage
DIGIT CAD Mucho Madrid2
Gexo Galleons Lilith
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EDITION STEMS Dickens
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Tixon

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Care Free Maidstone
Skippy Dragon Wick
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RealWood Wood Strip
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EIRE NEON Polo
Bad Boy Sans Serif
IMPRINT RELIEF X
Poor Type DotMatrix
Genoa Mira Scout
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BellBottom Pieces
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Sandy BigLime
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COMPTON Dashing
Defective Neu Dirty
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Mirisch Oldie3 InSilicon
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Kelvin Always Jagger
Laurance
Oregon Wet
MERRY
Stroked HotFood
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Rudelsberg
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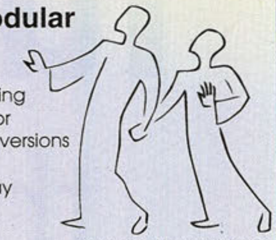
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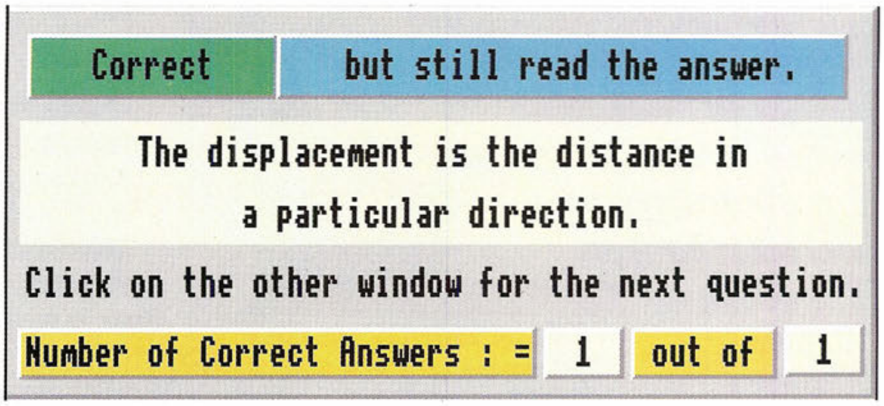
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Physics tutorial

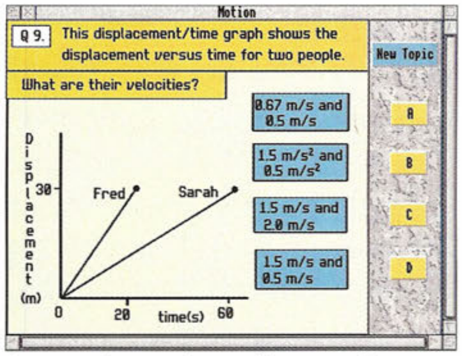
Joanna Allen looks at a self-help program for Science.

The *Physics Tutor* Level (5-8) is supplied on two 1.6Mb discs with a manual. The program opens to a menu page, with ten subject areas to investigate. The format is the same for all the sections: a large part of the screen displays a diagram and a question relating to the diagram. There is a choice of four answers for each question, and you may either click on the answer box directly or on the letter labelling the answer box. An answer window is then opened. If your answer is correct, the message 'Correct, but still read the answer', is given and the running total of correct answers is updated.

Unfortunately, if you get the answer wrong it does not tell you the correct answer, or give you the opportunity to retry the question there and then, but remembers which ones you got wrong and allows you to try these at the end of each section. The next question is then obtained by clicking the mouse anywhere on the main window.



The answer box always suggests you read the answer, even if you get it right!



Some questions require graph interpretation.

The diagrams are good, clear, large and well presented. It's pleasant to see the whole screen being used for the diagram, question and choice of answers; they're not just tucked away in the corner.

The different sections

Astronomy: There are 22 questions including: 'The Earth orbits the Sun once every...?'

Circuits: This time there are 32 questions covering topics such as electrostatics and calculations in the form: 'A kettle is used for three hours a day and is rated at 2000W. How many units of energy does it use each day?'

Energy: There are 30 questions including: 'On a roller coaster ride, which energy change takes place?' and: 'A device that is designed to convert electrical energy into sound energy is?' Other areas are fossil fuels, atomic structure and heat transfer in liquids.

Float and Sink: This section has 32 questions starting with equations: 'The equation relating force, area and pressure is...', and then moves onto calculations: 'What pressure does this brick exert on the floor?'

Forces: There are 30 questions including: 'The top deck of this bus is full of people. What has this done to the stability of the bus?'

Light: The 29 questions cover topics such as incident and reflected rays, real and virtual images, lenses and refraction.

Magnetism: The 26 questions include questions on magnetic materials and the attraction/repulsion between poles.

Motion: This section has 29 questions and has some good ones on graph interpretation which include: 'What is represented by the slope of the displacement/time graph.'

Radiation: These 21 questions cover areas of film fogging, how a Geiger Muller tube works, how far different types of radiation travel and background radiation.

Sound: The last section has 26 questions covering the standard areas of pitch, frequency and amplitude.

A great deal of information is covered by this program which has been aimed at the more able Key Stage 3 student or pupils studying for GCSE Physics examinations (although levels 9 and 10 are not covered). You have to think about the answer you choose and if you get it wrong the comment that follows does not always help you decide which was the correct answer.

As all the questions are multiple choice there is no variety, and although the subject area covered is vast, I got rather bored with the same style being used throughout. AU

Product details

Product: Physics Tutor
Supplier: Kinetic Computing
Tel: (01772) 795202
Price: £25 (site licence £85)

Pros: Graphics are clear and large • Whole range of physics topics covered with questions
Cons: Multiple choice questions have little variety

Make your own maps

Chris Miles looks at Minerva's program for converting OS Digital Map Data into *Draw* files.

As any geography teacher will tell you, maps are expensive. A great number are needed – often several copies of the same map must be bought to enable a class to complete the work – and while they are well-produced, they do not stand up to the rigours of the classroom.

Recognising the problem, Minerva has produced *Map Importer* which will convert Ordnance Survey digital map data into *Draw* files. This program is available to educational establishments only at the remarkably low price of £29.95 plus VAT. Site licences for primary and secondary schools are £45 and £120 respectively.

Once the software has been bought and the map data obtained, maps can be stored either as data and converted as required by students, or as *Draw* files. If a network is being used, all students can have access to the maps. The software comes on a floppy disc and the program installs on the icon bar. Map data files are then dragged onto the icon and, shortly after, a *Draw* save box is displayed. The *Draw* file can either be saved to floppy (if there's space) or hard disc.

The OS map data is sent to councils either on floppy disc(s), CD-ROM or a collection of CD-ROMs, depending on the size of the area. Devon, I understand, has 6Gb of data which presumably means about a dozen CD-ROMs. The files must be in NTF format and *Map Importer* will convert these to *Draw* files.

The detail contained within the map files is staggering. Information can be zoomed in on and printed out at whatever scale is chosen. Because the maps are held in 'electronic' form, students can make alterations to them to determine, say, a better route for a bypass, or where to develop a new housing estate. The maps can be displayed with either all the information or selected information only (for instance only main roads, no waterways).

Getting the data

As good as this program is, it has one major flaw: it's useless without OS digital map data. Several authorities have made the data available to schools with only a small handling fee or no charge at all. However, that is clearly not always the case as, at the time of writing, I have yet to obtain the data for my LEA in spite of countless phone calls to various OS offices, Minerva and the LEA, during which the phrase about the left hand and the right hand kept coming to mind. So, how do you get the data? The Ordnance Survey department will not supply data to schools, nor will Minerva. After several phone calls, to a range of seemingly disinterested people, it now seems the best way to begin is by phoning the OS Education department – (01703) 792376 – and speaking to Steve Shepherd, who I found very helpful. Steve should be able to give you the name of the OS contact for your LEA. Unfortunately, when I got in touch with my authority contact, I was passed from one person to another until finally I got back to the first person. Once I had the right person on the other end of the phone, I then found him to be (understandably) reticent about releasing licensed data in which they had invested several thousand pounds.

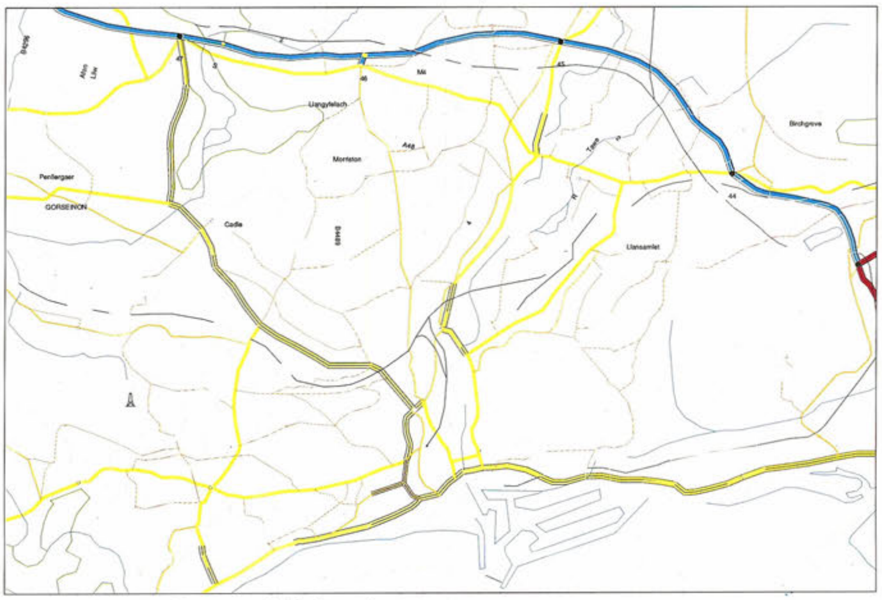
There is another drawback which, as far as I can see, is insurmountable. Because of the very strict licensing, you're only likely to get the data for your LEA. I'm sure local maps will be of enormous use to schools, but teachers who are thinking of using this program for exam subjects such as Geography (where students are required to study a specific area) are likely to be disappointed, unless they are fortunate enough to live in the area they are required to study.

All this hassle is a great shame because the program is excellent and the output will be of enormous use. I suggest that before buying *Map Importer* you make sure you can get the map data you require. Better still, wait until you have the data in your hand before purchasing the software. AU

Product details

Product: Map Importer
Supplier: Minerva Software
Tel: (01392) 437756
Fax: (01392) 421762
E-mail: minerva@zynet.co.uk
WWW: http://www.zynet.co.uk/minerva/
Price: £29 + VAT

Pros: Cheap program • Alterable maps • Fine level of detail
Cons: Data can be elusive • Maps only available from LEA



The data for Port Talbot is available from the OS.

Geoff Preston looks at Clares' suite of programs to brighten up your stationery.

Time for Celebration

Following on from the success of *Cardshop* (reviewed in the first *Computing for the Family* supplement), Clares has introduced a suite of programs by the same author. *Celebration* is supplied on five discs – one for each of the four programs and an extra resources disc. Each program has the same look and feel as *Cardshop*, so should be familiar to anyone using it for the first time.

As you can see from the screenshots, the programs look very similar and all work in much the same way. Click on the F icon to choose the font, click on the pen to open a box into which text is entered, click on the picture icon to select a graphic and so on. All the *Celebration* programs enable the user to produce some very respectable work, very easily. Of course the cost of this extreme simplicity is that the user has less control over the final design. While the resources supplied are extensive to say the least, variations are finite and limited to the options on the various menus. This is not to be taken as a criticism, far from it, but *Celebration* is most definitely for Key Stage 1 or 2. In secondary school, its use would be limited to special needs.

Banner

I remember using a program like this on an old BBC computer; type a word or phrase and you can print it out in a long line on continuous fan-fold paper. *Banner* takes the idea further. Apart from using outline fonts, you can add a graphic at the start and end of the banner. This would be ideal for producing large headings for display work but even so, I think this program will be of the least use.

Calendar

This program will generate a calendar for either a month or a whole year. Frames and graphics can be added either from the extensive library of graphics supplied with *Celebrate*, or by including your own. Outline drawings can be made available so that younger children can colour them in by hand after printing. This is especially useful if no colour printer is available.

Calendar will appeal to many primary school children, but with suitable graphics available, it could be used by some Key Stage 3 students. One feature which Modern Language teachers will find very useful is the ability to produce a calendar in any one of six languages which opens up some interesting possibilities.

Certify

Rewarding success is a vital part of educating. Strangely, it seems only recently that the potential of reward has begun to be fully exploited other than for exam certificates. *Certify* enables the user to create very professional looking certificates both quickly and cheaply. An interesting feature is that a CSV file of names can be dropped in to produce a batch of certificates.

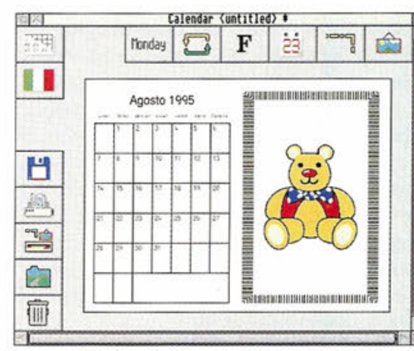
As with *Banner*, I feel this is likely to be used more by the teacher than by the students. My advice here is to invest in some quality paper, perhaps 'conqueror' or 'parchment', both of which are available in A4 size for the laser printer.

Gift Wrap

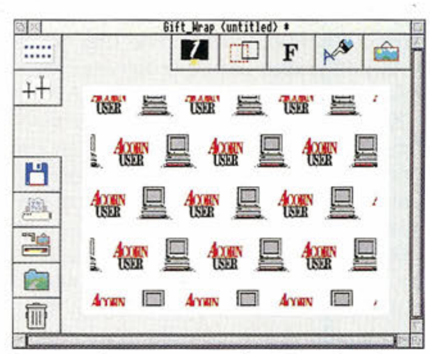
This is another program which I vaguely remember using on a BBC computer. Again, this version uses all the power of the Arc to produce a repeating design suitable for wrapping paper or textile design. The user can apply either one or two objects which can form the pattern. Each object can be either a graphic or two lines of text. There is probably more control in *Gift Wrap* than any of the others. The size of the objects can be chosen and the pattern of repeat can be adjusted both in the horizontal and vertical.

Conclusion

The simplicity of use and common feel of all of these programs makes them ideal for the younger ones who will soon be producing some super work. The price, too, is excellent. At £34.95 inc VAT it is well within reach of parents. The full site licence is £82.25 inc VAT. My only grumble is the same as for *Cardshop* – files are saved as applications and consequently are not very efficient over a network. Having said that, most homes do not have networks and not many primary schools, it seems, have one either. AU



Calendars in several languages open up interesting possibilities for language teaching.



For wrapping up my new Risc PC, perhaps?

Product details

Product: Celebration
Supplier: Clares Micro Supplies
Tel: (01606) 48511
Fax: (01606) 48512
Price: £34.95 inc VAT (site licence £82.25 inc VAT)

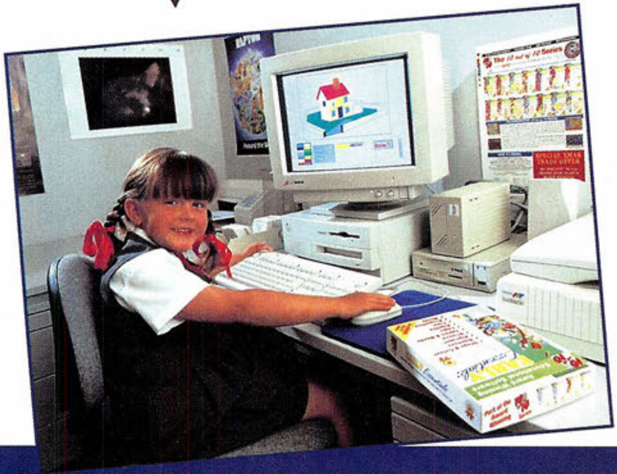
Pros: Simple interface • Excellent value
Cons: Files saved as applications

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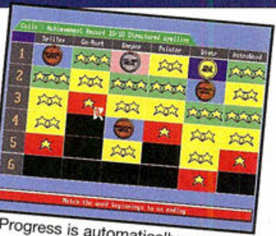
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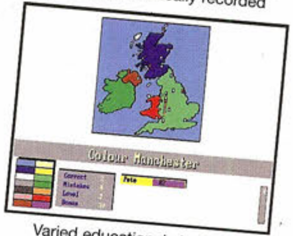
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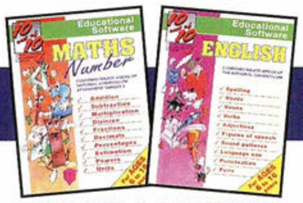
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Questions & answers

RISC OS 3.6 on older machines, embedded graphics in Impression and colour printers.

Q After reading your article on the new Risc PCs and the new A7000, I am keen to upgrade my A4000 to RISC OS 3.60, if I eventually can. However, after reading the article a couple of times, I thought that some of my programs might not work on the new OS – *Impression Style*, *ArtWorks* and games like *Stunt Racer 2000*, *Cannon Fodder* and *Dungeon*. Is this true? And will I be able to upgrade anyway?

Philip Huish
East Dereham

A **Your question raises a number of points concerning the RISC OS 3.6 upgrade for older machines, which I will attempt to clarify the situation:**

• The upgrade will only be available to Risc PC 600 owners – that is, users who already have RISC OS 3.5 in their machines. Both RISC OS 3.5 and RISC OS 3.6 are written to take advantage of the features of the ARM600 and ARM700 series of chips, and so cannot be fitted to ARM3, ARM250 and ARM2 machines. Pre-Risc PC machines will continue to be upgradable as far as RISC OS 3.1, but no further. There are advantages to this approach for users of older machines; because there are so many machines which use and will always use RISC OS 3.1, most applications will continue to be RISC OS 3.1-compatible. Had Acorn made it possible to upgrade to RISC OS 3.6, there would have been a danger of software writers deciding to standardise on RISC OS 3.6, leaving stranded all those who didn't want to spend the money on upgrading (as happened to an extent with RISC OS 2). Only software which really *needs* the extra power and colour available on a Risc PC (such as *Composition*) will not be written to run on RISC OS 3.1.

• The upgrade from RISC OS 3.5 will not strictly speaking be RISC OS 3.60, but a higher version of the operating system, perhaps RISC OS 3.62. This will take account not only of any bug-fixes but also the work needed to ensure that the new version of FileCore will correctly access an old-style format of hard disc, and works with the earlier Risc PC hardware. The upgrade will not be available until next year as a result.

• Nearly all Desktop programs that run on RISC OS 3.1 will run on RISC OS 3.6 – software writers don't want to cut off a large proportion of their market, after all. This includes *Impression Style* and *ArtWorks*. Games are a slightly different matter. Even those which run on RISC OS 3.5 on a Risc PC may not run on an A7000, because the architecture of the ARM7500 is different from that of the ARM610/VIDC20 combination (most should be OK, though). The best idea is to contact the games companies directly. Naturally, the ubiquitous *GameOn!* in its second release will smooth the passage of many games to the ARM7500-based machine. So in conclusion you won't be upgrading your A4000 to RISC OS 3.6, unfortunately.

However, if you decide in the light of this to buy one of the new machines instead, you can expect the bulk of your software to run with no problems. Your games will probably work either with an update or with *GameOn!* although the older the game is, the less likely that either solution will be possible.

Q Your business page editor, Mr Alex Singleton, advises users of Colton software such as *Fireworkz Pro* to deselect the 'Embed pictures' option, therefore saving on disc space. I am a user of *Impression Style*, and frequently use graphics in my DTP work. However, I could find no option for embedding the choices for *Style*, and suspect that there is no way of 'de-embedding' the graphics. Is this the case?

In the production of the magazine, I notice that you often use screen 'snapshots'. I had assumed that you used the 'Snapshot' option on *Paint* until I saw that *Paint* was never loaded on these pictures. How, then, do you obtain the pictures?

Conall Patton
Derry

A **You are correct about *Impression Style*. *Impression* stores all its graphics within the file or directory where the text is stored. This means that if you drag in a picture which is elsewhere on your hard disc, the picture will be stored twice, which can waste space.**

In defence of this way of doing things, it does mean that if you accidentally change or delete the original graphic it does not affect the one in the document. Also, if you archive the document (as we do) you will save all the graphics with it, so you are never left in the situation where you come back to a document years later to find that none of the graphics exist any more.

However, the option to use references to graphics rather than the graphics themselves would be a useful addition to *Impression*. You would then only need to update a logo once, rather than several times.

How do we do snapshots in the magazine without having *Paint* on the icon bar? I'm

Contacting the ARM Club

Last issue we published a telephone number for the ARM Club when mentioning the club's product *GameOn!* While this number is correct for contacting the club about subscriptions, it is not really intended for use when ordering software products.

To order a copy of *GameOn!* (or any other ARM Club software) you should write to:
The ARM Club, FREEPOST ND6573, London N12 0BR
or e-mail gameon@nucleus.demon.co.uk.

tempted to say 'magic', and leave the process shrouded in an air of mystery, but actually it's easy. There are at least three ways that we do this at *Acorn User*:

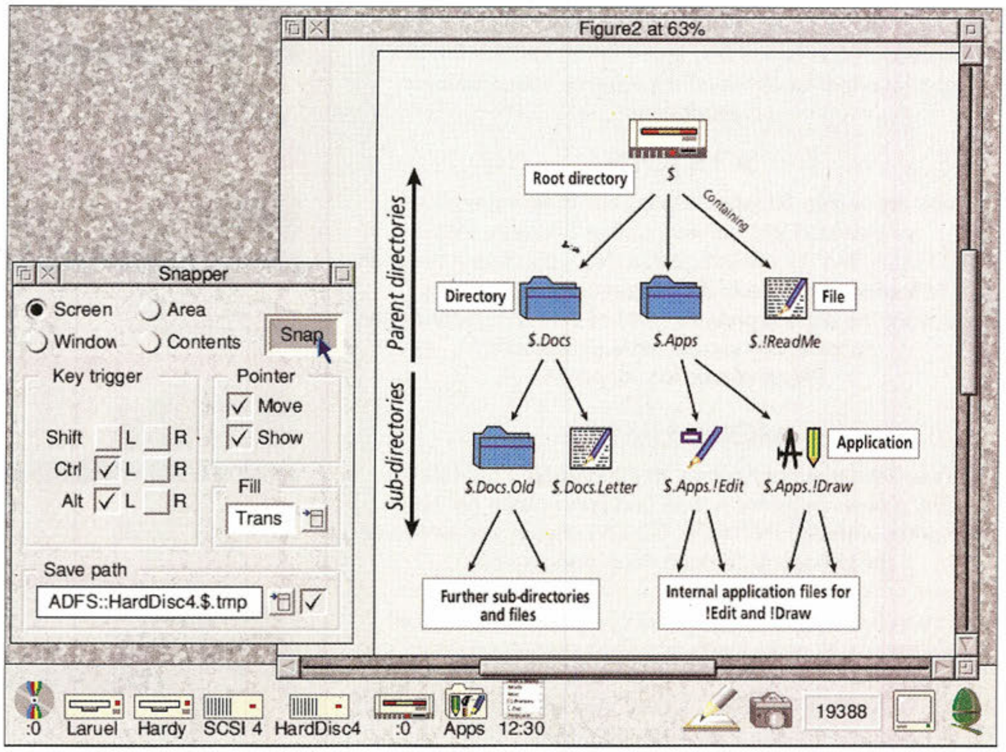
The first of these is to use *Paint*, but to make it 'invisible'. Of course, you can spend many patient minutes erasing it from the textured icon bar on the Risc PC, but it's much easier simply to redefine the application sprite as a transparent rectangle. Hey presto – a copy of *Paint* that doesn't show up on the icon bar.

The second is to use *Snapper* from David Pilling. This installs on the icon bar, but when quit leaves a module behind which grabs the screen (or part of it) when Ctrl and Alt are held down.

Our most-used screen-grabber is based on the *Snippet* program from 4Mation, and works in almost the same way as *Snapper*. We find this one is usually better for grabbing games outside the Desktop – Doggysoft's *Hacker* is also useful for this.

This isn't always the end of the story, as palette information is often lost. The *Fire and Ice* screenshots in this issue originally came out black; the palette in each was carefully re-coloured by hand. In fact, since *Fire and Ice* changes the palette halfway down the screen, each screenshot was coloured in no less than three stages.

4Mation is on (01271) 25353, Doggysoft is on (01494) 673222 and David Pilling is at PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR.



Screen-grabbing using *Snapper* – normally most of this would be hidden.

Q I am considering buying a colour printer, but am a little confused about the options on offer. Could you explain how a dye-sublimation printer differs from an ink-jet printer. I gather that 24-bit colour is possible on both, but is somehow 'better' on the dye-sublimation printer, even at the same resolution. Is this the case?

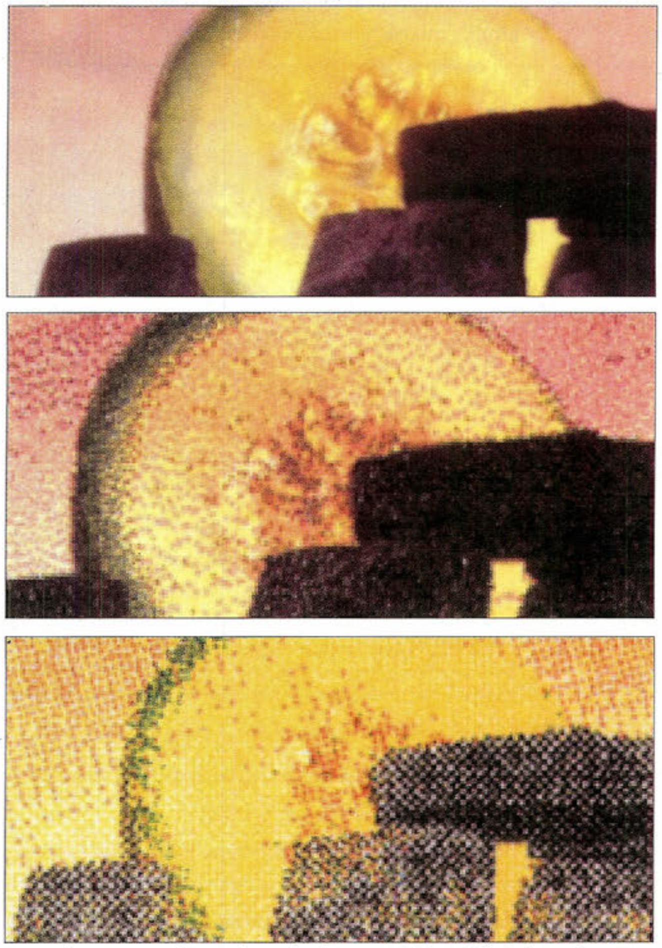
J Sebastian
London

A The difference between a dye-sublimation printer and an ink-jet printer is in the degree of control which can be exercised over the quantity of ink used for each dot. In a dye-sublimation printer, the colour intensity of (for instance) the black ink can be varied over the whole range from white, through pale grey, dark grey to full black. On an ink-jet, the ink can be on or off: black or white. It's like the difference between a dimmer switch and a normal light switch.

On a dye-sublimation printer, an individual dot can be any one of 16 million colours. On an ink-jet it can be any of eight – nine, if you count black as different from full cyan, magenta and yellow.

The way an ink-jet simulates more colours is by dithering – printing patterns of dots in different colours to give new shades of colour. For instance, you can get what looks to the eye like about sixteen shades of grey from a four-by-four grid of black and white dots. Of course, this drops the resolution, so a 300dpi printer suddenly becomes a 75dpi printer (or even less).

There are different methods of dithering which give different results, as shown to the left. AU



Top to bottom: A printout from the Phaser 440 dye-sublimation printer at 300dpi 24-bit colour (reviewed on page 53), the same image printed on an Epson Stylus Color ink-jet at 720dpi using Acorn's error-diffused printer driver and finally the image printed on the 300dpi Canon BJC-600 ink-jet with a CC *TurboDriver* which uses simple dithering to mix the colours. All three have been magnified up roughly four times.

C for yourself

Steve Mumford delves into the intricacies of recursion.

You might be glad to know that we're reaching the end of our trek through the basics of C, and it's almost time to start applying our knowledge to more complex applications including those that run in the Desktop. However, before we begin that particular quest I'd like to take a moment to investigate an interesting aspect of the language that has a reputation for causing some confusion. To be honest, recursion isn't something that's vital to know about, but if you understand how to apply the methods involved, you can save yourself time and produce some particularly neat and satisfying code.

Self-referencing and recursion

We bumped into the ideas behind recursion in last month's article – the reason we couldn't include a reference to a structure inside its own definition was that the compiler would get trapped in a never-ending loop and fall over in a somewhat graceless manner. That's recursion as the compiler sees it; however, it's possible to do the same within the execution of the program:

```
void bottomless(void)
{
  printf("Now we call bottomless()
          again!\n");
  bottomless();
}
```

The above fragment defines a function that includes a reference to itself in the same way as the structures that we looked at last month.

In this case, the function prints out a line of text, then calls itself and performs the routine again. In effect it creates an infinite loop, but there's a subtle difference. When a function is called, information concerning what that function was doing is written to something named the *stack*. It's an area of memory which is used as a form of scratch pad. This is where the computer stores any local variables being used at the time, and the address that it must return to after it's finished executing the current procedure. The stack can cope with more than one entry – if you've called a function which in turn calls another, both return addresses are stored in the correct order. In technical terms, this is known as a *last in, first out* stack because the newest address stored is always the first one to be returned to.

In the running of a normal program the stack remains quite small due to the fact that there's a finite number of function levels. However, if you include a function that calls itself, it's possible for the stack to grow rapidly as each call to the procedure adds another data entry to the list. If this goes on for too long, the area of memory set aside for the stack can overflow, and – yes, you've guessed it – we witness a crash. You might be wondering how a function that calls itself can ever avoid causing program failure, and the answer lies in providing an escape route which can be used once a certain condition is reached. A popular example of recursion is shown below, and it provides a factorial function:

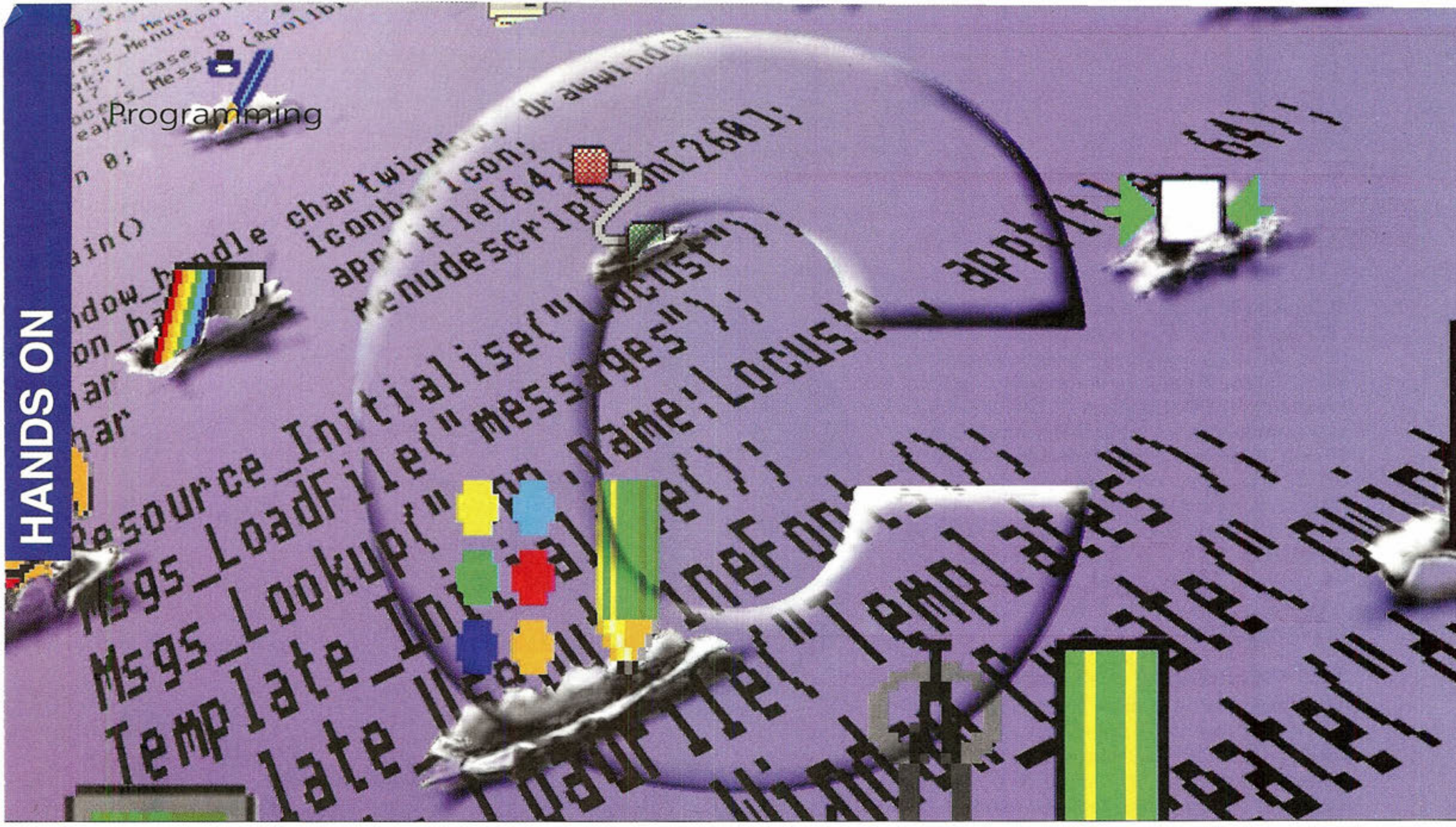
```
int fact(int x)
{ if (x==1)
  { return (1);
  } else
  { return (x * fact(x-1));
  }
}
```

The operation of the function is a little hard to describe, and it may help if you've got a bit of paper to doodle on, but here's what happens:

Performing the factorial of a number requires it to be multiplied by all the numbers below it, from one upwards. In order to carry this out, the procedure breaks the task down into individual steps. In common with a lot of recursive algorithms, there are two distinct phases to the calculation – one is performed as the level of recursion is deepening, and the other comes into operation while the recursion level works back upwards. In this case, the first task is to work out the extent of the sum – a process which is a little like expanding brackets in algebra. The second half of the routine actually performs the multiplication and hands the result back to the previous level, thus working its way out of the recursion pit.

Whenever the function is called, it checks the value of the number it's been passed. If the value is anything other than one, fact() calls itself to calculate the product of x and x-1, and the execution of the parent function is frozen just before it evaluates the multiplication.

If the number that's been passed to the function is equal to one, this signifies that the end of the calculation has been reached – instead of progressing any further, the function returns with the value 1. This is the turning-point of the whole process and from this point on, the computer will work its way back up the stack,



JACK KREINDLER

performing all the outstanding multiplications and finally producing a result.

In order to illustrate this, let's assume the function fact() has been called with the value 3. The program makes the comparison mentioned above and then executes the line shown below, with the appropriate values filled in:

```
return(3 * fact(3-1));
```

At this point, fact() is called once more, and we're now a level deeper into the recursion. Yet again, the comparison is made and control passes to the line shown:

```
return(2 * fact(2-1));
```

If we remember that we were halfway through an earlier multiplication when we dropped a level, we can write these two lines down together to form:

```
return(3 * (2 * fact(1)));
```

fact() is called one last time, and since the if condition is now successful, no further calls are made – the function returns with a value of one. We arrive in the middle of the previous function with a multiplication that can now be performed. Its result is passed back to the parent and, at long last, the answer to the original question can be produced. The stack has shrunk to its initial size, and the program can continue as normal.

Data structures such as binary trees and linked lists can be more easily handled if recursion is used – for example, if you were using a linked list of 20 elements and you wanted to delete the last 15, you would find yourself having to read and store the pointer to the following element before you deleted the current one – otherwise, the address of the next element is lost and there's no way of recovering the memory. It's perfectly possible this way, but it's a little ungainly. The recursive method steps down the list, checking the *next element* pointer and calling itself with that value if it's not NULL – in this way, it finds the end of the list. Once the routine discovers a NULL pointer, the recursion switches phase and works its way back, deleting each element as it goes.

Why use recursion?

It should be clear from the above example that the process of recursion gets pretty complex, and it's all too easy to slide into a quagmire of never-ending function calls. Writing bug-free recursive code requires a substantial amount of thought, and at first sight it might seem that recursion isn't worth the trouble. In most cases, it's easier to compose an iterative version of an algorithm using the standard for-next and do-while loops, but there are situations where the opposite is true – for instance, the Quicksort algorithm is often programmed using a recursive approach. The speed of operation is another factor to be considered, since recursion involves making large numbers of function calls, and each one of those takes time. The simple answer is to avoid recursion unless you're completely happy with it, or you fancy a bit of mental athletics.

And now for something completely different

I think it's time we broadened our horizons – in the forthcoming issues, I'll start describing the methods of writing applications that run in the Desktop. There are several added complications, including the fact that the functions for accessing the WIMP depend on which C compiler you own. Next month, I'll take a look at the different Desktop libraries available and we'll choose one with which to continue.

In the meantime, you might like to look over the last few issues and write a few more programs for yourself. There's no substitute for thrashing out your own software when it comes to learning a language, and it's always amusing to find a new way of crashing your computer – I'd be interested to hear of any particularly spectacular ones. See you next month. AU

Absolute

The Filer is at the heart of the Archimedes operating system, and controls reading from and writing to floppy discs, hard drives, CD-ROMs, the network and so on. Everyone reading this will almost certainly have some familiarity with how files on the Archimedes work – it's very hard to use with the machine without doing so. However, there may be some areas which you are still unclear about, so the intention of this article is to clear up any remaining confusion.

The Filer-related icons on the icon bar are those on the left. Generally, each different icon represents a different filing system – floppy disc, hard drive and so on – although obviously there can be more than one icon for each filing system. It is quite common to have two hard drives or floppy drives on the same computer.

Most of these icons behave in the same way; when you click with Select (or Adjust) on them, a window opens displaying the contents of the disc – this window is called the *directory display*. This window displays the contents of the directory – files and other directories. Unfortunately, this is complicated by the fact that not all directories and files appear to behave in the same way.

Files, directories and other animals

Actually, it's fairly simple. The disc will have *files* on it – files being collections of data which could be anything from a block of text to a BASIC program. In the end, anything stored on the disc will be stored in a file. The icon given to a file indicates the file's type – a few common ones are shown in figure 1. Double-clicking with Select on the file's icon runs the file, but exactly what 'running the file' involves depends upon what type of file it is. Often what happens is that another program is run which then loads the file itself.

If, when you opened the window showing what is on the disc, you were suddenly presented with every single file on the disc, it would be a bit daunting, especially if the disc were a hard drive with several thousand files on it. Because of this, files on a disc are grouped into *directories* which appear as blue rectangles with a small tag on the top on most displays. Double-clicking with Select on a directory will open another window showing the directory's contents.

Directories are often compared to folders of documents in an office – the icon is meant to suggest a compartment in a filing cabinet. This analogy is fine as far as it goes, but remember that directories may contain other directories, (which may contain still more directories) which is not a situation encountered often with folders in the office. Between them, directories and files account for everything on a disc. However, there are two special cases worth considering. The first of these, an *application*, is a special case of a directory. As you will probably know, 'application' is also another name for 'program'; an application directory is one containing the files needed to run a particular program. Applications are distinguished from normal directories because their name starts with a '!' character.

Applications look and behave like files in that they don't have the standard directory icon and don't open another window when you double-click on them. What actually happens when one is double-clicked upon is that the file inside the application directory called *!Run* is run, and this sets up everything to run the program correctly. None of this is apparent to the casual user though – all you need to know is that if you double-click on an application, the application runs.

Should you wish to open an application as a directory to see the files inside it, Shift-double-click on the application. Naturally, these files are important to the running of the program, and should only be altered if you know what you are doing – for instance, if the manual tells you to. There will be more information on the files inside an application later in the series, for those that wish to know.

If an application is a directory that behaves like a file, then an image file is a file that behaves like a directory. An archive is an example of this, as is the PC partition on a hard drive. These are (often quite large) files which will open a window showing a directory display. All the information contained within this window is in the image file. Again, you don't need to know how image files work to use them; I only mention them at all because it can be confusing to come across something that doesn't have a directory icon which nonetheless opens a directory viewer when you double-click upon it (but which may, if you don't have the filing system installed, give a 'no run action specified for this file' error). Image files were introduced in RISC OS 3, although archives behave in a similar manner in RISC OS 2.

Directory family trees

Directories can contain other directories, sometimes called *sub-directories*. This situation is similar to that for menus, where a menu leads to other submenus. Just as the whole menu structure is sometimes called a menu tree, the directory structure is usually referred to as the *directory tree*. Following this convention, the lowest level of directory on a disc – the one that is seen when you click on the disc's icon on the icon bar – is called the *root directory*.

The directory containing a sub-directory is called the sub-directory's *parent directory*. Obviously, many directories may share the same parent (although no

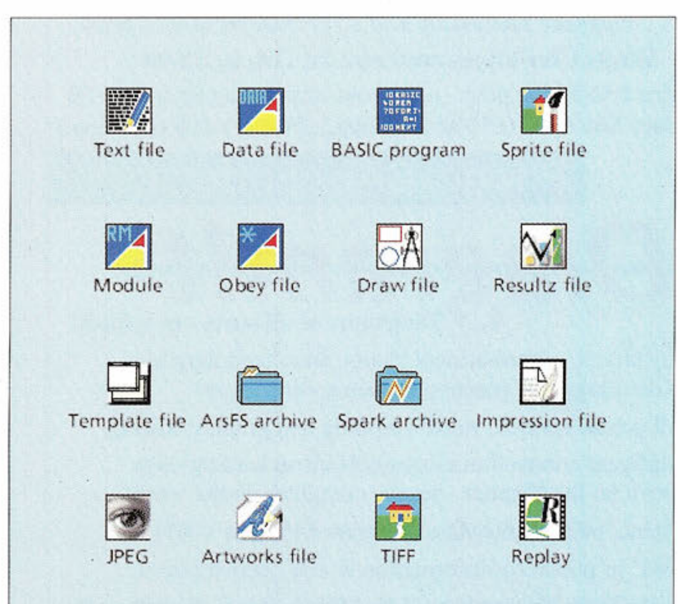


Figure 1 – a few common file types, with the standard representation of their icons.

Files and how to use them is the topic for David Matthewman to discuss in the next two instalments of our beginners' section.

beginners

two directories may contain the same sub-directory, as the sub-directory would then appear twice on the disc).

Therefore, in moving deeper into the directory tree you are travelling through sub-directories, and moving in the opposite direction you are travelling through parent directories.

There is one slight complication to all this, which is that many manuals and documentation for programs refer to the process of opening a sub-directory as moving 'down' the directory tree – in other words, they refer to the tree as though it were standing on its head. Figure 2 shows the general conventions for referring to directory trees.

Using the Adjust button on the mouse makes it much easier to move up and down directory structures. Opening a directory by double-clicking with Adjust closes the window of its parent directory, while clicking with Adjust on the close icon of a directory display opens a window for its parent directory. This allows you to navigate the directory structure without leaving the Desktop cluttered with windows; try it.

In the next issue, I will go on to look at how you can alter the appearance a directory display, and explain how the pathname of a file is constructed. AU

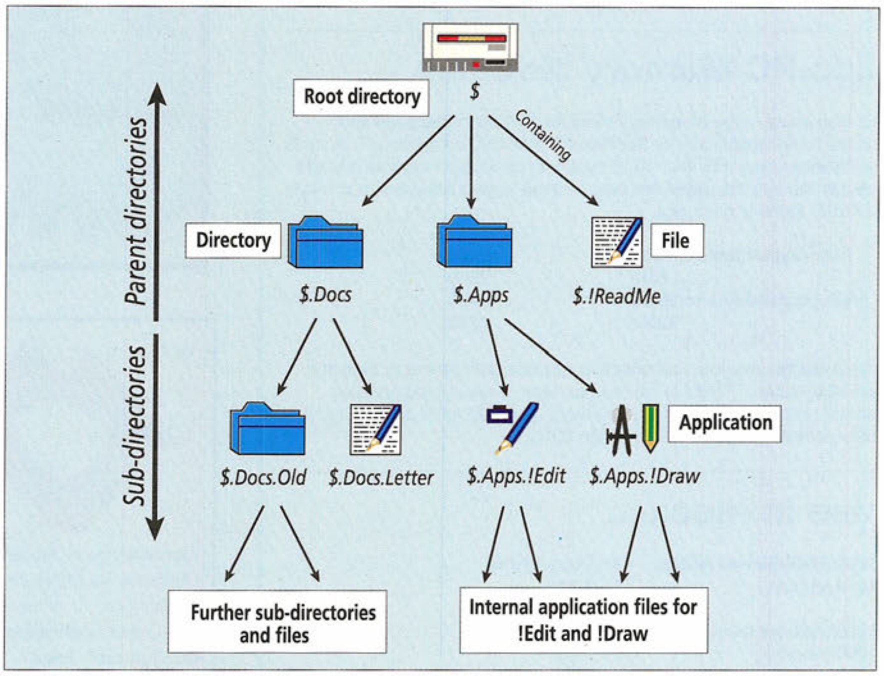


Figure 2 – an example directory tree. In the diagram the 'tree' is presented upside-down, with the 'root' directory at the top. This corresponds to conventional terminology; moving down through the levels in the diagram corresponds to opening directories or moving down the directory structure. The names in italics below the icons represent the pathnames of the files and directories, with the root directory always represented by '$' (more on this next issue). As the diagram indicates, 'applications' such as *Edit* and *Draw* are actually directories which themselves contain files – they can be opened by Shift-double-clicking on them.

Jargon box

Application: a directory containing resources to run a program – hence 'application' is also used to describe the program itself. Applications are always prefixed by a '!' character and do not have the standard blue directory icon, most having a unique icon. Double-clicking on an application runs it rather than opening the directory – to open the directory, Shift-double-click with Select.

Directory: a grouping of files and other directories on a disc. To see the files and directories within the directory, double-click with Select (double-clicking with Adjust will, in addition, close the original directory viewer).

Directory tree: the structure of all the directories on the filing system.

Directory viewer: a window showing the contents of a directory. A directory viewer is opened by double-clicking on a directory.

File: a collection of data. Anything stored on a disc is stored in a file.

Image file: a file which normally behaves like a directory, in that it opens a directory viewer when double-clicked upon.

Parent directory: a directory which itself contains other directories is known as the parent directory for the other directories.

Root directory: the directory which is displayed when a disc icon is first clicked upon – the top-most directory in a directory tree. All other directories on the disc can be accessed from here.

Sub-directory: a directory within another directory.



Run the RISC

Mike Cook has much joy giving his computer a bit of stick.

As I showed how all Acorn computers could have the facility of a bi-directional printer port last month, I thought I would use that capability straight away this month. Joysticks are out of fashion on RISC machines mainly because there is no easy way to fit them. True, there is a joystick port on some machines – the A3010 for example – but there is no such port for the vast majority of models.

In the old Model B days, all machines had a joystick port, although the design was unique to Acorn and your choice of joysticks was limited. This joystick port also had the ability to be proportional, a feature ahead of its time but great for executing controlled turns in *Elite*. Now the rest of the world produces digital joysticks in an increasingly bewildering assortment of shapes and sizes. However, the mass market for these has produced very low prices and some companies even produce special themed joysticks to accompany their games.

Now you can get joystick adaptors for RISC machines but I don't think there is one that will fit absolutely all models. With the addition of last month's hardware where appropriate, I would like to look at a system that will fit the entire Acorn range from the A310 to the Risc PC.

How joysticks work

Let's look first of all at exactly what a joystick does – see Figure 1. This is a simplified cross section through a joystick and shows the stick, on a swivel arrangement, with an earthed contact. By moving the stick left or right you can bring the earth in contact with the left or right wire. If you were to take another section at right angles to this first then there would be exactly the same arrangement for up and down.

So, from the electrical point of view, all a joystick consists of is four contacts which can be made to connect to a common wire. Of course, the physical nature of the switch prevents the up

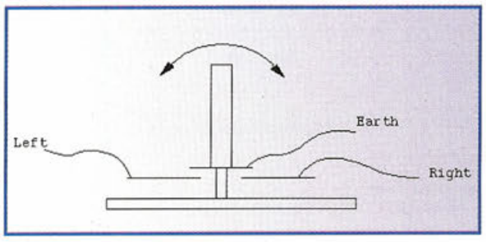
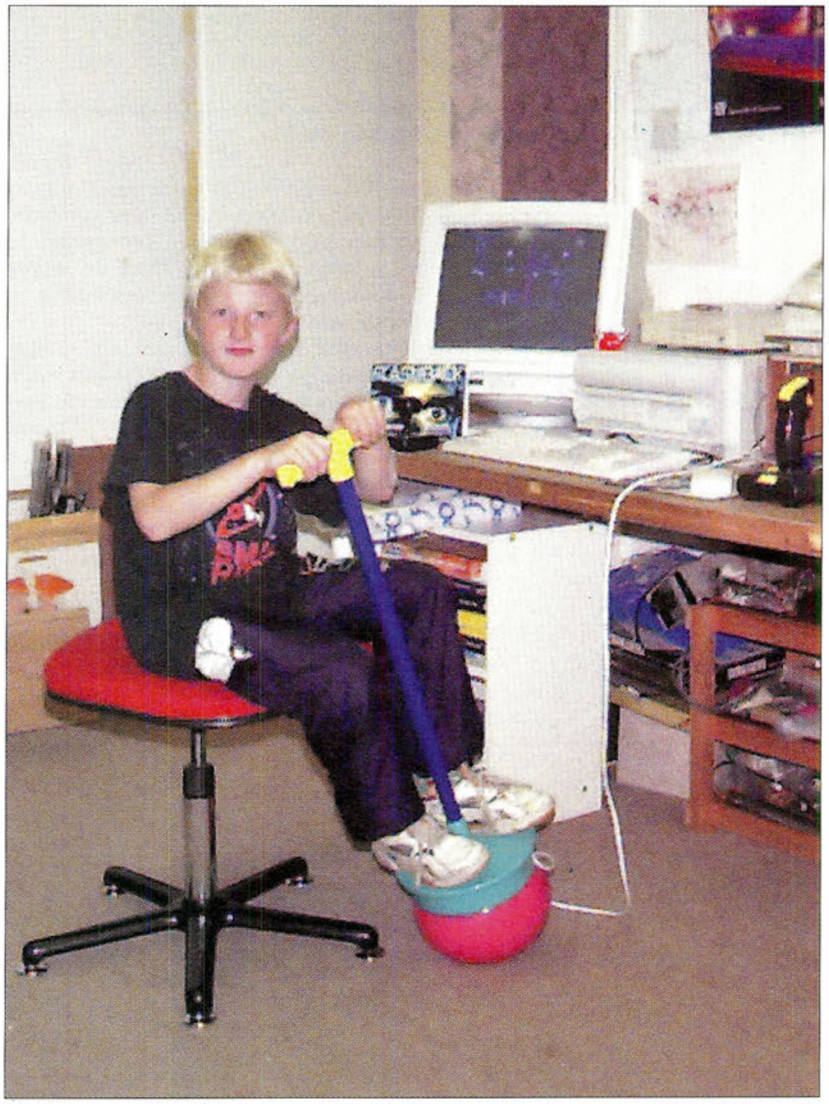


Figure 1: The electrical circuit of a Joystick.



Create your own joystick from one of the latest toys by using some mercury tilt switches and Mike Cook's module.

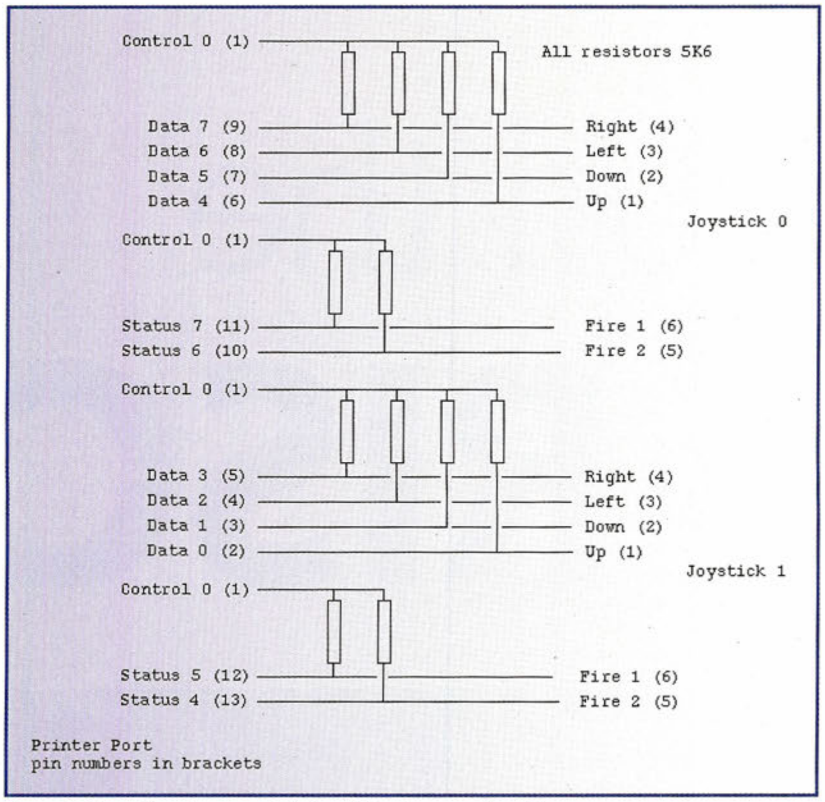


Figure 2: The wiring diagram of the joystick printer port interface.

and down being connected at the same time as well as the left and right, but all other combinations are permitted. In addition, most joysticks have one or more fire buttons. These are simply push buttons that make another connection to the common wire.

What we need to do is make this arrangement into a computer input. In the electronic world this type of input is known as a 'contact closure' and is quite the most common form of input. What you need to do is arrange it so that the computer input gives you a logic one with no contact made and a zero when the contact is made. That may seem upside down, but it is chosen because it is the simplest option to implement and it is always easy to invert things later if necessary.

What you do to achieve this is to use a pull-up resistor connected between the input and 5 volts so that the input normally sees a logic one. Then the common wire is connected to the earth or zero volts, so that when it touches the input it makes the input a logic zero.

With a bi-directional port we have enough inputs to cater for two joysticks with two fire buttons on each and as a source of five volts we can use the strobe line (or control bit 0 as I prefer to call it). The wiring diagram is shown in Figure 2; if you only want one joystick then simply leave out joystick one. Note that you need only wire up the second fire button if you actually have one on your joystick. The value of the pull-up resistor is not too critical, anything between 2K and 47K will suffice.

Constructing the interface

There are several ways you can make this. I choose to use the interface screw connection board we made a few months back, but for convenience you could make up a dedicated lead with the resistors being mounted in the 25-way shell and the 9-way socket being an insulation displacement cable (IDC) flying lead.

Alternatively, you could mount the 9-pin sockets in a small box, the pin numbers are shown in Figure 3. In fact they are normally printed on the back of a plug and are easily spotted with a domestic scanning electron microscope.

Having connected the joystick to your computer you now need to make it work with your games. Now, Acorn has supplied – albeit belatedly – a standard joystick module. The idea is that if you have a model without a built-in joystick then you can write a module using the same SWI number to interrogate your hardware and return the same values. That is what we will do, only instead of looking at the printer port directly we will go through the parallel port driver SWI. This is the clever bit, because if you have only got a single direction printer port you will have replaced the parallel port SWI with my module that drives the multiplexed hardware, and neither the joystick module nor the game will know anything about it.

Replacement module

What our new module has to do is convert the signals it sees into the bit patterns that Acorn specifies. Figure 4 shows what the software sees when it reads the printer port with two joysticks

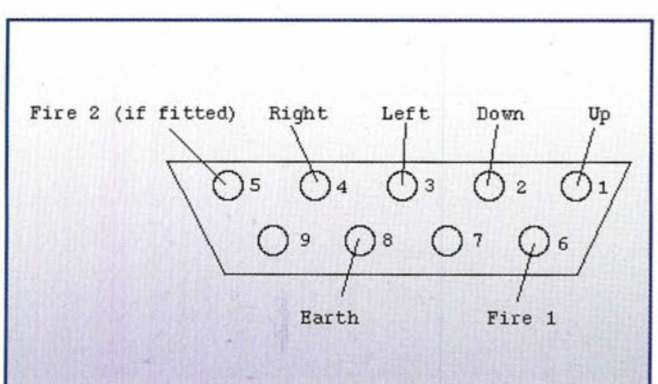


Figure 3: Looking at the back of a 9-pin DIN socket.

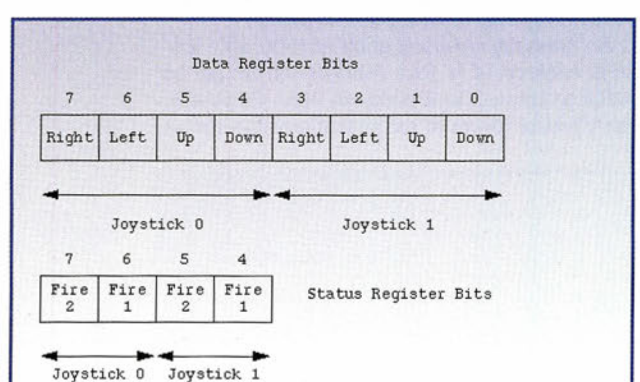


Figure 4: What the software sees when reading the printer port.

connected. The bits will be a logic one when there is no connection and a logic zero when the joystick is pushed in that direction.

Now look at Figure 5. This shows what bit patterns need to be returned from this module to satisfy Acorn's standards. The module takes in a value in R0 requesting the joystick number it needs to read; note that as this is a 32-bit number there could, in theory, be millions of joysticks. The module returns in R0 a bit pattern indicating the state of the joystick. You can break the value in R0 down into bytes, the lowest giving the up/down status, then the left/right status, and finally the state of the fire buttons in the third byte.

The fire buttons are arranged such that the first button occupies bit 0, the next bit 1 and so on, with unimplemented buttons returning zero. Note here that the button value is a one when pressed and a zero when not, exactly the opposite of what the hardware produces. Also, see how the arrangement of bits in the status register for the fire buttons in Figure 4 makes more sense now, as all we have to do is shift these bits to get them in the right place. The logic inversion can be handled simply with an exclusive OR operation.

The direction indicators are a little more tricky to deal with. First of all, if joystick zero is being requested, then the data byte is shifted to the left by four places. Then a series of bit tests build up the pattern we need. The pattern Acorn requires might at first seem odd, but there is method in the module's madness. The scheme as adopted can easily be used to return values from an analogue or proportional joystick read by a 7-bit A/D (analogue to digital) converter, but that's a project for another day.

The source code for the module as well as the module itself is on this month's cover disc. The only game I had that used the Acorn joystick system was *Flashback* and that worked perfectly.

Customised joysticks

Naturally, I am not content with using other people's joysticks, so I thought I would finish by describing some of the special joysticks I have made. In the toy shops at the moment there is a sort of pogo stick which is a rubber ball mounted on the end of a stick. This can be turned into a very different sort of joystick with the aid of four mercury switches.

The idea is that you put the switches under the rim of the foot rest as shown in Figure 6 and mount a micro switch as a push-button on the handle. You don't hop about on it but sit down with your feet on it. Moving the handle and tipping the foot rests will have the same effect as moving the joystick. You can even operate it with no hands if you want as the handle is easily removable. It is harder to operate but leaves your hands free for all those other keys you need to use in flight simulators. I've found that if you sit on a swivel chair when you are doing this the chair rotates with the left and right movement, giving your body some feedback and getting you more immersed into the game.

Finally Figure 7 shows a baton-style joystick again made with mercury switches, only this time mounted in a tube. Movements of the wrist holding the baton produce joystick movement.

There is more to be done with this project; for example, some really old games don't use Acorn's module but rather some other type of module. If you have some of these then you could unravel the module and write a replacement to use this hardware scheme. If you do this, let me know and we could include them on the cover disc. See you next month for, as they say, something completely different. AU

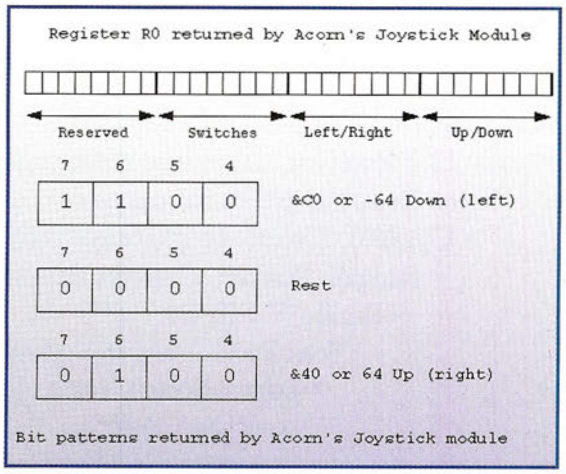


Figure 5: What the Acorn Joystick module should return.

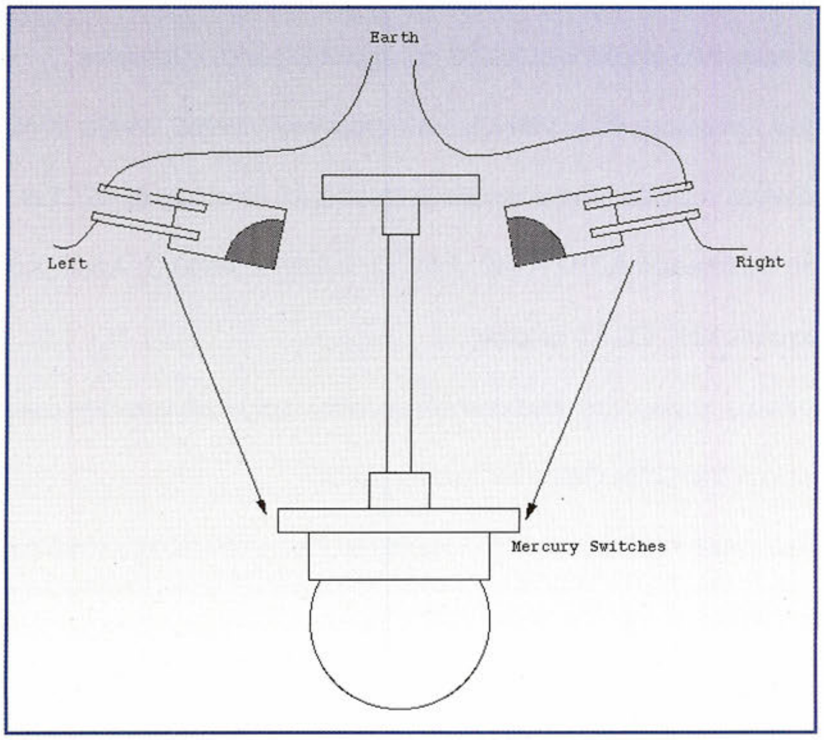


Figure 6: Foot operated Joystick

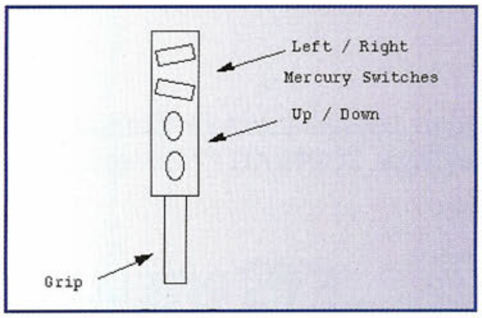


Figure 7: A baton style Joystick

Acorn Customer hotline

Essential information for all Acorn users, compiled by Dave Walker of Acorn Customer Services exclusively for Acorn User.

Questions and Answers

Q: Now that Acorn is shipping RISC OS 3.6 in the A7000 and Risc PC 700, what are its advantages over RISC OS 3.5?

A: One of the most obvious enhancements in RISC OS 3.6 is the new version of FileCore and its interface to ADFS and other filing systems; this removes the previous limitation on disc partition sizes of 512Mb, and replaces it by a practical 'law of diminishing returns' limit of 8Gb per partition. In addition, the *InternetA* module is replaced by a copy of the full *Internet* module which is compliant with the new DCI4 specification, and the *SpriteExtend* module has been enhanced to allow OS handling of embedded JPEG images within sprites. To support the improved sound hardware fitted to the motherboards of the Risc PC 700 and A7000, support for 16-bit sound has been integrated into the OS.

The CD-ROM drivers have been extended to cater for the ATAPI-interfaced Sony CD-ROM drive we now fit, and of particular importance to users with lower-specification machines equipped with smaller quantities of RAM, the main applications – *Edit*, *Draw*, etc – have been moved back into ROM; code has been added to the applications to cater for the extended functionality supplied by the enhanced modules.

RISC OS 3.6 is not going to be made available as an upgrade for Risc PCs fitted with RISC OS 3.5; at least not as a set of replacement ROMs. However, the DCI4 network stack is available as Freeware from ftp.acorn.co.uk in the */pub/riscos/releases/DCI4* directory, and other sections of the enhancement set may be decoupled from the ROM and made available either as Freeware or on a commercial basis in the future. Members of Clan Acorn who have access to the World Wide Web can already apply for the opportunity to test the decoupled version of FileCore and the associated filing system modules.

Acorn Customer Services
Acorn Computers Ltd
Acorn House, Vision Park,
Histon, Cambridge CB4 4AE
E-mail: customer.services@acorn.co.uk

ATAPI: not just another acronym

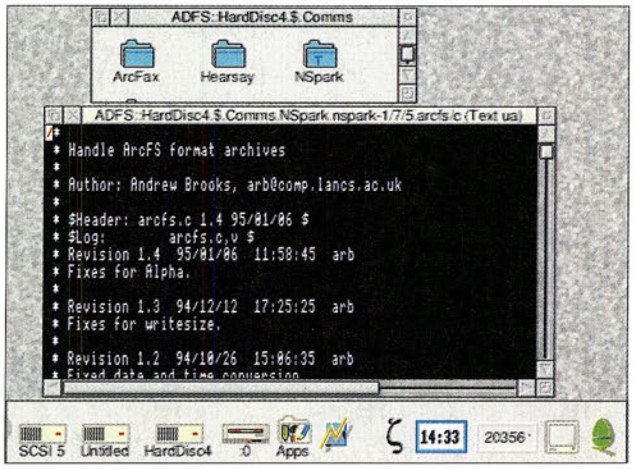
As IDE developed into a widely-used standard for connecting hard drives to desktop computers, it was recognised that IDE only supported a very small subset of computer peripherals. In particular, although IDE can be used to support CD-ROM drives, it is not the most efficient protocol for the task. ATAPI ('ATA Packet Interface') was developed to address this issue; although it utilises the familiar ATA master/slave protocol associated with IDE drives and uses a standard 'straight-through' IDE cable, it introduces much of the philosophy of SCSI protocols.

The ATAPI drive shipped with the new Risc PCs and A7000 is a Sony CDU50E; this is a dual-speed multi-session unit which is compatible with CD-ROM/XA, Photo CD and White Book MPEG. The drive also has an audio mixer on board, so it is possible to play Red Book (audio) CDs through the computer's internal speaker. We have not tested any other models of drive yet, so we cannot guarantee that they will work correctly.

Yet more free upgrades

The latest archive to be uploaded to ftp.acorn.co.uk is an enhanced version of the *PC486* application, as used in conjunction with the Risc PC 486 co-processor card. This version has not completed its pass through our stringent software test cycles yet, and is covered by the same disclaimer of liability as all other material on the site; we hope to have a fully tested version ready by September. You can find the archived distribution as */pub/riscos/releases/pccard/486update.arc*.

By popular request, we have also added */pub/riscos/releases/nspark.tar*, which is a source code distribution of a de-archiver which is capable of decompressing the .arc-suffixed archives, suitable for building on UNIX or DOS. AU



The *nspark.tar* release will allow *Spark* and *ArcFS* files to be read on a DOS or UNIX machine – if you have the C compiler to build the programs.

Acorn 32-bit RISC Computer Systems



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LASER PRINTERS

Brother HL630	6ppm	£324
Brother HL660	6ppm	£464
Brother HL1260*	12ppm	£910
Canon LBP430W	4ppm	£363
Canon LBP1260	12ppm	£909
Epson EPL3000*	4ppm	£389
Epson EPL5200+	5ppm	£471
Epson EPL9000	8ppm	£1199
Epson EPL9000 PS	8ppm	£1362
HP LaserJet 4L	4ppm	£375
HP LaserJet 4MV	16ppm	£1989
HP LaserJet 4V	16ppm	£1368
HP LaserJet 4+	12ppm	£989
HP LaserJet 4M+	12ppm	£1299
HP LaserJet 4Si	16ppm	£2085
HP LaserJet 4Si MX	16ppm	£2967
HP LaserJet 5P	6ppm	£587
HP LaserJet 5MP	6ppm	£735
HP LaserJet Colour	8ppm	£4199
NEC Superscript 610+*	6ppm	£289
NEC Superscript 660i*	6ppm	£565
NEC Superscript Colour 3000*		£649
Oki OL400ex*	4ppm	£279
Oki OL410ex*	4ppm	£385
Oki OL810ex*	8ppm	£649
Oki OL850 PS*	8ppm	£1199
Oki OL1200ex*	12ppm	£966
Panasonic KXP4430**	5ppm	£479
Panasonic KXP4440**	10ppm	£679
Panasonic KX-P6100	5ppm	£265
Panasonic KX6150	6ppm	£288
Star Win Type 4000	4ppm	£288

On-site warranty: *=1 Year ** = 2 Years

LASER RAM UPGRADES

Type	1M	2M	4M	8M
Brother HL630	£85	-	-	-
Brother HL631	£70	-	-	-
Canon LBP4+	£139	-	-	-
Canon LBP4i	£109	-	£279	-
Canon LBP8 IV	£119	-	£299	-
EPL4000/4100/4300	£62	£110	£205	-
EPL5200/5600	£49	£115	£199	-
HPIII/IIIP/IIID	£59	£95	£150	-
HP II/IID	£65	£95	-	-
HP IIISi	-	£85	£158	£229
HP 4/4M/4P/4MP	-	£84	£115	£229
HP 4L/4ML	£65	-	-	-
KX-P4410/4430	£89	£129	-	-
KX-P4420/4450i	£89	£109	£165	-
KX-P4400/5400	£75	£109	£175	-
OKI OL400e	£99	£118	-	-
Star LP8	£138	£225	-	-
Star LS5	£75	-	-	-

LASER CONSUMABLES

Type	Toner	Drum	Dev
Brother HL600 Series	£22	£99	-
Canon/Star 4s	£51	-	-
Canon LBP-8 IV	£70	-	-
Canon LBP-8III	£46	-	-
EPL4100/4300	£64	£89	-
EPL5200	£82	-	-
EPL7100/7500/8100	£117	-	-
Fujitsu VM600	£85	-	-
Fujitsu VM800	£115	-	-
Fujitsu VM4	£29	£149	£89
HPII/III/IIID	£47	-	-
HP IIP/IIIP	£51	-	-
HP IIISi/4Si/MX	£77	-	-
HP 4/4+/4M	£65	-	-
HP 4L/4ML/4P/4MP	£45	-	-
HP 4V/MV	£109	-	-
HP 5P/5MP	£60	-	-
NEC 610	£75	-	-
NEC S60/60P/62P/90/95	£105	-	-
OKI OL400/800	£19	£189	-
OKI OL400e	£17	£129	-
KX-P4410/30	£28	£80	£90
KX-P4440	£32	£108	£115
KX-P4420	£24	£57	£55
KX-P4450/50i/51/55	£18	£75	£60
KX-P4400/5400	£14	£55	-
KX-P6100	£12	£98	-
Qume Crystalprint	£99	£189	-
Star LS-5	£83	-	-
Star Wintype	£68	-	-

LASER ACCESSORIES

JetPage Postscript Cartridge - IIP/IIIP	£169
Postscript Upgrade for LaserJet 4	£270
Postscript Upgrade for LaserJet 4P	£225
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lowe Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for Laserjet 4	£199
LaserJet III FX/IBM Emulation Cart	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for Laserjet 4P	£85

9 PIN MATRIX PRINTERS

Citizen 1200+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£105
Epson LX100	80col	£98
Epson LX300	80col	£98
Epson LX1050	132col	£187
Epson FX870	80col	£245
Epson FX1170	132col	£304
Epson DFX5000+	132col	£1188
Panasonic KX-P1150	80col	£89
Panasonic KX-P3696	80col	£259
Star LC15	132col	£177
Star LC100 Colour	80col	£89
Star LC90	80col	£78
Star ZA200	80col	£265
Star ZA250	132col	£329

24 PIN MATRIX PRINTERS

Citizen ABC Mono	80col	£103
Citizen ABC Colour	80col	£125
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 330X	132col	£309
Epson LQ100	80col	£99
Epson LQ150 Mono	80col	£112
Epson LQ150 Colour	80col	£158
Epson LQ300	80col	£150
Epson LQ570+	80col	£217
Epson LQ870	80col	£381
Epson LQ1070+	132col	£303
Epson LQ1170	132col	£441
Epson DLQ3000	132col	£805
NEC P2Q	80col	£98
NEC P3Q	132col	£178
NEC P62	80col	£315
NEC P72	132col	£372
Panasonic KX-P2023	80col	£108
Panasonic KX-P2124	80col	£198
Panasonic KX-P2135 Colour	80col	£124
Panasonic KX-P3626	132col	£252
Star LC24-15 II	132col	£232
Star LC240 Mono	80col	£90
Star LC240 Colour	80col	£103
Star XB24-200 Colour	80col	£329
Star XB24-250 Colour	132col	£395

RIBBONS/INK CARTRIDGES

Manufacturers Original Ribbons Only

Type	Black	Colour
Canon BJ10ex/BJ10sx	£14	-
Canon BJ30	£10	-
Canon BJ200/BJ230	£16	-
Canon BJ300/BJ330	£11	-
Canon BJC70	£9	£14
Canon BJC600	£7	£8
Canon BJC800	£6	£22
Canon BJC4000 Ink Tank	£7	£13
Citizen 120D+	£4	-
Citizen Swift 200/240/ABC	£4	£13
Citizen Swift 24X	£8	£18
Epson LX100	£4	-
Epson LX400/LX850/FX870	£4	-
Epson LX1050/FX1170	£5	-
Epson LQ100	£4	-
Epson LQ150	£4	£12
Epson LQ570/870	£5	-
Epson LQ1070/1170	£8	-
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£23	-
Epson Stylus Colour	£12	£27
Epson Stylus 300	£12	-
Epson Stylus 800/1000	£10	-
Fujitsu DL1150/DL1250	£5	£7
Fujitsu DL3600	£6	£12
Fujitsu B100/B200	£18	-
HP DeskJet 500 Series	£19	£21
HP DeskJet 660	£20	£23
HP DeskJet 850	£22	£20
HP DeskJet 310/320	£13	£21
HP DeskJet 1200c	£19	£21
HP PaintJet	£16	£18
HP PaintJet XL300	£16	£18
Kaga/Taxan KP810/815	£5	-
NEC P3Q/P32Q	£8	-
NEC P62/72/90	£8	£14
Panasonic 1150/1170/1180	£7	-
Panasonic 2180/23/24/35	£7	£14
Panasonic 1624/2624	£8	-
Panasonic KXP3626/3696	£11	-
Star LC10/LC20/LC100	£5	£9
Star LC100/200	£5	£11
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	-
Star SJ144 Thermal	£6	£8

INKJET PRINTERS

Canon BJ200ex	80col	£170
Canon BJ30	80col	£153
Canon BJ230	132col	£239
Canon BJ300	80col	£351
Canon BJ330	132col	£390
Canon BJC70	80col	£225
Canon BJC600e	80col	£335
Canon BJC800	32col	£1065
Canon BCJ820 (Mac)	132col	£1228
Canon BJC4000	80col	£232
Citizen ProJet IIC	80col	£198
Epson Stylus 1000	132col	£311
Epson Stylus Colour	80col	£350
Epson Stylus Colour Pro XL	132col	£1549
Epson SQ870	80col	£453
Epson SQ1170	132col	£609
HP DeskJet 320	80col	£164
HP DeskJet 320 & CSF	80col	£180
HP DeskJet 540	80col	£225
HP DeskJet 660C	80col	£294
HP DeskJet 850C	80col	£387
HP DeskJet 1200C	80col	£630
HP DeskJet 1200C PS	80col	£985
HP DeskJet 1600C	80col	£830
HP PaintJet XL300+ A4	80col	£1599
Oki OJ300 Colour	80col	£232
Star SJ144	80col	£178
Star Wintype 800C Thermal	80col	£592

SHEET FEEDERS

Canon BJ10ex/BJ10sx	£40
Canon BJ300	£86
Canon BJ330	£96
Citizen Swift 24/200/240	£75
Epson LX400	£69
Epson LQ570/LQ870	£47
Epson LQ1070/LQ1170	£89
HP DeskJet 310/320	£48
NEC P20/P220	£59
NEC P3Q/P32Q	£85
Panasonic 1170/1180/1123	£59
Panasonic 1124i/1124/2124	£79
Panasonic 1824/2824	£128
Panasonic KX-P2135	£30
Star LC100	£69
Star LC24-20	£69
Star LC200/LC24-200	£69

INKJET REFILL PACKS FOR

• Canon BJ10ex/BJ10sx - 2 pack	£10
• Canon BJ10ex/BJ10sx - 5 pack	£24
• Canon BJ10ex/BJ10sx 1 Original Cart & 3 Refills	£36
• Canon BJ200 2 Refills	£34
• Epson SQ870/1170 - 2 Refill	£9
• HP DeskJet Std Capacity - 2 pack	£8
• HP DeskJet Std Capacity - 5 pack	£20
• HP DeskJet Std Capacity black Cart +3 Std capacity refills	£30
• HP DeskJet Hi-Capacity - 2 pack	£17
• HP DeskJet Hi-Capacity - 5 pack	£35
• HP DeskJet Colour Cart & 1 each (3) colour refills	£39

ACCESSORIES

Citizen Swift 200/240/ABC Colour Kit	£32
Canon BJ10sx Battery Pack	£32
Epson 0K Serial Interface	£29
Epson 8K Serial Interface	£75
Epson 32K Serial Interface	£95
Epson LQ100 Tractor Unit	£29
Epson LX300 Colour Kit	£29
HP DeskJet FX Emulation Cartridge	£49
HP DeskJet IBM Emulation Cartridge	£57
HP DeskJet 500 256K RAM Cartridge	£75
HP DeskJet 320 Battery Pack	£33
HP DeskJet 320 CarryCase	£49
HP DeskJet 320/540 Colour Kit	£28
HP DeskJet 320 Parallel Cable	£12
HP DeskJet 1200 Postscript Upgrade	£499
HP DeskJet Prestige Elite Fonts	£55
HP DeskJet Letter Gothic Fonts	£56
Panasonic Serial Interface	£49
Panasonic 32K Buffer	£16
Panasonic 2180/2123 Colour Kit	£30
Star 8K Serial Interface - LC Range	£52
Star 8K Serial Interface - XB Range	£39
Star 32K Buffer - LC24/XB24	£52
Dustcovers for 80col printers	£6
Dustcovers for 132col printers	£9

SPECIAL OFFERS

• 80 col Perspec Printer Stand	£7
• 132 col Perspex Printer Stand	£10
• 80 col Printer Stand	£8
• 132 col Printer Stand	£12

LUTON STORE
Finway, Dallow Road, Luton, Beds.
Tel: 01582 74 55 55

WATFORD STORE
250 Lower High Street, Watford, Herts.
Tel: 01923 237774

HP On-Site Warranty Packs

Model	1 Yr	3 Yr
Mono DeskJet/Deskwriter	£32	£40
Colour DeskJet/Deskwriter	£45	£65
LaserJet 4L/4ML DJ1200/1600	£78	£90
LaserJet4+/4M+	£135	£160
LaserJet 4V/4MV	-	£200
LaserJet 5P/5MP	-	£130

PRINTER SHARER/BUFFER

Manual Printer Sharers

Type	Serial	Parallel
2in/1out	£12	£13
2in/2out	£28	£29
3in/1out	£15	£17
4in/1out	£24	£26
5in/1out	-	£38

Auto Parallel Printer Sharer Buffers

Type	0K	256K	1Mb
2in/1out	£29	-	-
2in/2out	-	£105	£134
4in/1out	£45	-	-
4in/2out	£69	£124	£149
8in/1out	£64	-	-

Auto Serial Printer Sharer Buffers

Type	0K	256K	1Mb
2in/1out	£27	-	-
2in/2out	-	£124	-
4in/1out	£44	-	-
4in/2out	£69	£147	-
8in/1out	£62	-	-

RAM Expansion for above Auto Sharers

	256K	1Mb	2Mb
RAM Module	£59	£78	£124

Pocket Buffers

	256K	1Mb	2Mb
Parallel Flash Buffer	£65	£98	£119
Paralel Fast Flash Buffer	£85	£125	£158
RS232 Plotter Buffer	£155	£184	£330

COMPACT CONVERTER

Serial to Parallel & Parallel to Serial	£49
As above with 256K buffer	£55
IEEE-488/Centronics Converter	£49
RS232 to RS422 Converter	£37
Parallel Line Extender	£37

PRINTER LEADS

	1.8m	5m	10m
PC Parallel - 18 wire	£4	£8	£13
PC Parallel - 25 wire	£5	£10	£15
25 'D' Male/Male	£4	£8	£13
25 'D' Male/Female	£5	£9	£14
36 Centronics Male/Male	£8	£10	£15
BBC B/Master Parallel	£6	-	-

PAPER & TRANSPARENCIES

A4 80g White Laser Paper - 500sht	£2.50
A4 80g Coloured Paper - 500sht	£3.50
9.5" x 11" Fanfold paper - 1000sht	£7
9.5" x 11" Fanfold paper - 2000sht	£12
14.5" x 11" Fanfold paper - 1000sht	£8
14.5" x 11" Fanfold paper - 2000sht	£14
A4 70g Fanfold paper - 1000sht	£9
A4 70g Fanfold paper - 2000sht	£15
DeskJet Transparencies - 50sht	£35
DeskJet Cut Sheet A4 Paper - 200sht	£15
Stylus coated paper 360 A4 200 sht	£17
Stylus coated paper 720 A4 200 sht	£19

High Quality Paper
500 sheets A4 90gsm pure white ideal for laser & inkjet printers
£5.50

LABELS

On continuous fanfold sheets

1000 90mm x 36mm Single Row	£4.50
1000 90mm x 36mm Twin Row	£4.80
1000 90mm x 49mm Twin Row	£4.95
1000 102mm x 36mm Twin Row	£4.70
2400 70mm x 37mm Laser Labels	£15.25

All prices, specifications and offers subject to change without notice. Please ensure suitability with manufacturer before ordering. All returns are subject to a handling charge. Goods not sold on a trial basis.
Sales subject to our terms and conditions available on request. Prices exclude VAT @ 17.5%. E & OE.

Autumn Special Offers

All items advertised on this page are new, unless otherwise stated. All offers are available while stocks last and will not be repeated once stocks are exhausted. Special prices are available on certain items when purchased in quantity. Please call 01582 745555 for details.

Acorn Software

A3000 Monitor Stand	£12
A3000 External Podule Case	£8
A3000 Keyboard Dustcover	£2
A3000 Keyboard & Monitor Cover	£4
A300/400 Keyboard Dustcover	£4
A300/400 Micro & Monitor Dustcover	£4
A3010/A3020 Dustcover	£2
A4 Notebook Carry Case	£25
A3000/A3010 Shoulder Bag	£5
ARC Keyboard Extension Lead	£2
ARC MK4 Mouse	£10
ARC Quest Tracerball	£14
Powerpad Single Joypad	£21
Powerpad Dual Joypad	£29
External Hard Drive Case & PSU	£30
A300/400/500 Keyboard	£85
A3000 Replacement Keyboard	£20
A4000 Keyboard	£73
A3000 Power Supply	£30
A300/A400 Power Supply	£10
A4000 Power Supply	£45
A3000 800K Floppy Disk Drive	£25
A5000 1.6M Floppy Disk Drive	£20
ARC to BBC Serial Link	£10
Pocketbook A-Link	£38
Pocketbook Parallel Link	£24
RISC OS 3.1 Carrier Board - A300	£15
A3000 60Mb Internal IDE Hard Drive	£120
A3000 User Port/MIDI Upgrade	£40
A300/A400 ROM Expansion Card	£10
A300/A400 I/O Expansion Card	£60
A300/A400 Econet Interface	£10
A300/A400 IEEE Interface	£20
A300/A400 Dual RS232 Card	£15
ARC External FDD Interface	£5
MK 1 ARM3 Turbo Card - A400 only	£10
MK 2 25MHz ARM 3 Turbo Cad	£95
MEMC 1A Upgrade	£20
A300/A400 Mk2 Handscanner	£30
A300/A400 Scan256 Handscanner	£85
Scanlight Professional MONO	£200
A300 4way Backplane	£18
A300/A400 Fan	£5
A3000 I/O Expansion Card	£15
ARC Multiscan VIDC Enhancer	£10
ARC SuperVGA VIDC Enhancer	£10
A300/A400 I/O Expansion Card	£20
A300/A400 16bit SCSI Interface	£45
A300/A400 Cached SCSI Interface	£85
A300/A400 16bit IDE Interface	£25
A3020/A4000 486SX PC Card	£200
A3000/A3010 8bit IDE Interface	£45
A3000 Ultimate Expansion	£35
A3010 Ultimate Expansion	£35
Ultimate Digitiser uPodule	£90
Ultimate Analogue uPodule	£20
Vision Colour Digitiser - A300/A400	£50
HiVision Colour Digitiser - A300/A400	£95
Vision Colour Digitiser - A3000	£69
HiVision Colour Digitiser - A3000	£95
Hawk V9 MK2 Dithered Digitiser	£175
RiscPC Econet Interface	£25
486 25MHz PC Card - A300/A400	£285
A300/A400 Ethernet Interace	£125
A3020/A4000 Ethernet Interface	£40
RiscPC Ethernet Card	£89
A3020 Ethernet Card - BNC	£109
Oscar CD ROM Drive	£179
PhotoView SCSI Card Upgrade	£10
Acorn Multimedia Expansion	£250
A3000 1Mb RAM Upgrade	£25
A5000 4Mb RAM Upgrade	£60
RiscPC 1Mb VRAM Upgrade	£45
RiscPC 2Mb VRAM Upgrade	£110

Bargain Books

BBC BASIC V Reference Manual	£10
ARC Assembly Language	£8
RISC Technical Manual	£2
A4 Notebook Technical Manual	£40
A4 Notebook Welcome Guide	£5
Acorn to PC Book	£5
Budget DTP on the Archimedes Book	£5
Wimp Programming for All Book	£5
RISC OS Style Guide	£5
Good Impressions Book & Disk	£10
A3010/A3020 Technical Manual	£23
Impression II - Dabhand Guide	£8
Graphics on the Arm Book	£8
RISC OS 3.1 PRM Vol. 1-4	£89
RISC OS 3.5 PRM Vol. 5	£25
File Handling for All Book	£5
Artworks Made Easy Book	£8
Control on the Archimedes Book	£8

Acorn Software

Clares Render Bender v2	£15
Clares Pro Artisan v2	£85
Clares Armadeus	£20
Clares Rhapsody v2	£39
Clares Schema v1	£15
Clares Titler	£25
Clares Schema v2	£88
Clares Plot	£55
Clares Topographer	£53
Clares Rhaposdy v3	£65
Clares Vox Box	£20
Minerva Multistore v2	£72
Minerva Home Accounts	£15
Minerva System Delta Plus v2	£10
Minerva Linkword - Spanish	£25
Minerva Primeword	£39
Minerva Dataword	£10
Krisalis Manchester United	£5
Krisalis Manchester United Europe	£5
Krisalis Quest for Gold	£3
Krisalis Sim City	£15
Krisalis Champions	£14
Krisalis HeroQuest	£10
Krisalis Lemmings 2 - Tribes	£15
Krisalis Jahangar Khan Squash	£10
Krisalis Chuck Rock	£5
Krisalis Oh No! More Lemmings	£9
Krisalis Populous	£10
Krisalis Lotus Turbo Challenge II	£14
Krisalis Collection	£10
Europress Fun School 3 - 5 to 7 yrs	£10
Europress Fun School 4 - Under 5 yrs	£10
Europress Fun School 4 - 5 to 7 yrs	£10
Europress Fun School 4 - 7 to 11 yrs	£10
Silicon Vision Shareholder v2	£50
Silicon Vision ArcPCB v1.7	£62
Silicon Vision Financial Controller	£100
Silicon Vision Logix v1.1	£65
Silicon Vision ProSheet v1.3	£25
Silicon Vision WimpGen v2.0	£52
Silicon Vision Robo Logo	£15
Silicon Vision PowerRouter	£40
Beebug Ovation DTP	£53
Beebug Type Studio	£23
Beebug Sleuth v1.5 OCR	£36
Beebug Easy C Compiler	£40
Beebug DeskEdit 3	£19
Beebug Sleuth v2.0 OCR	£72
Beebug Easy C++ Compiler	£73
Beebug Chartwell	£18
Icon Easiwriter v3	£109
Icon Techwriter	£142
Superior Masterbreak	£5
Superior Ego: Repton 4	£10
Superior Play it again Sam 3	£10
Superior Technodream	£11
Superior Play it again Sam 1	£12
Superior Speech v2	£15
Oak Genesis II	£15
Oak Repro	£41
Oak Genesis Plus	£5
Oak Genesis Project	£40
Gamesware Cycloids	£10
Gamesware Games Wizard	£10
Gamesware Simon the Sorcerer	£25
Gamesware Xenon 2	£10
Gamesware F.R.E.D.	£10
Gamesware Ixion	£10
Renegade Sensible Soccer	£15
Renegade Magic Pockets	£14
Serial Port Investigator II	£5
Serial Port ArcTerm v7	£49
Oregan Sally & Wally	£10
Oregan Arcturus	£16
Spacetech Photodesk	£135
Iota Complete Animator	£63
ESM Investigating Maths	£25
Colton Fireworkz	£70
Millenium Diggers	£15
Gremlin Zool	£10
Colton Pipedream v4	£82
Apricote Prophet Accounts	£120
Grandslam Pacmania	£5
Lindis Presenter GTi	£46
Autodesk Autosketch II	£20
Hybrid Elite	£28
Tower of Babel	£5

Acorn Software

Acorn 1st Word Plus	£5
Acorn Desktop Publisher	£5
Acorn Pocketbook Schedule	£15
Acorn Pocketbook Plotter	£25
Acorn Desktop C	£45
Acorn C++ Compiler/Assembler	£152
Longman Numerator	£25
Longman Revelation Image Pro	£110
Longman Magpie v2	£15
Longman Pendown v2	£35
Longman Pinpoint Junior	£20
Longman S-Base Personal v2	£80
Longman Pinpoint v2	£49
Longman Advantage	£38
Longman First Page DTP	£37
Longman Pendown Etoile	£40
Longman Insight	£50
Longman Logotron Logo	£49
Longman Landmarks - 1940	£18
Longman Landmarks - Rainforest	£18
Longman Landmarks - Victorians	£20
Longman Landmarks - Columbus	£19
Longman Landmarks - Aztecs	£14
Longman Landmarks - Civil War	£18
Longman Landmarks - Elizabeth I	£19
Longman Look & Read - Skyhunter	£15
Longman Concept Keyboard Designer	£5
Longman Picture Point	£22
Sherston Selladore Tales	£15
Sherston Glimpse	£7
Sherston Hilighter	£10
Sherston Animated Alphabet	£15
Sherston Farm	£10
Sherston Wizards Revenge	£13
Sherston Aztecs	£25
Sherston Crystal Maze	£21
Sherston Arcventure - Romans	£20
Sherston Badger Trails	£25
Sherston Naughty Stories 2	£34
Sherston Around World in 80 Days	£25
Sherston Talking Stories - KS3	£26
Sherston Talking Topics - Homes	£8
Sherston Talking Topics - SIX Pack	£38
Sherston Bodywise	£28
Sherston Plantwise	£28
4thD Apocalypse	£10
4thD Arcticulate	£10
4thD Black Angel	£10
4thD Break 147 & Superpool	£10
4thD Chocks Away Compendium	£10
4thD E-Type Compendium	£12
4thD Enter the Realm	£10
4thD Gevious Bodily ARM	£10
4thD Holed Out Compendium	£10
4thD Galactic Dan	£10
4thD Time Machine	£12
4thD E-Type II	£15
4thD Stunt Racer 2000 Extra Tracks	£9
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*info

Dave Lawrence and Dave Acton present more programs, tips and techie trivia from beyond the PRM.

Another dose of Salt's

Author: Darren Salt

Darren Salt entertains us now with a simple desktop game akin to Solitaire or one of its countless derivatives.

In *MindTrap* you have to line up the blocks in the correct columns. Things get a bit trickier later on when there is more than one layer to solve and blocks may be moved between layers. When you first load *MindTrap* you can start a new game by clicking Select on the icon or resume an old game by clicking Adjust. You will be asked to enter your name and if you're resuming an old game, the passcode. Remember that your name is used to help decode the passcode, so make sure you can remember what your name is. Unless you have entered an invalid passcode the game window will now open. Closing the game window pauses the game's timer.

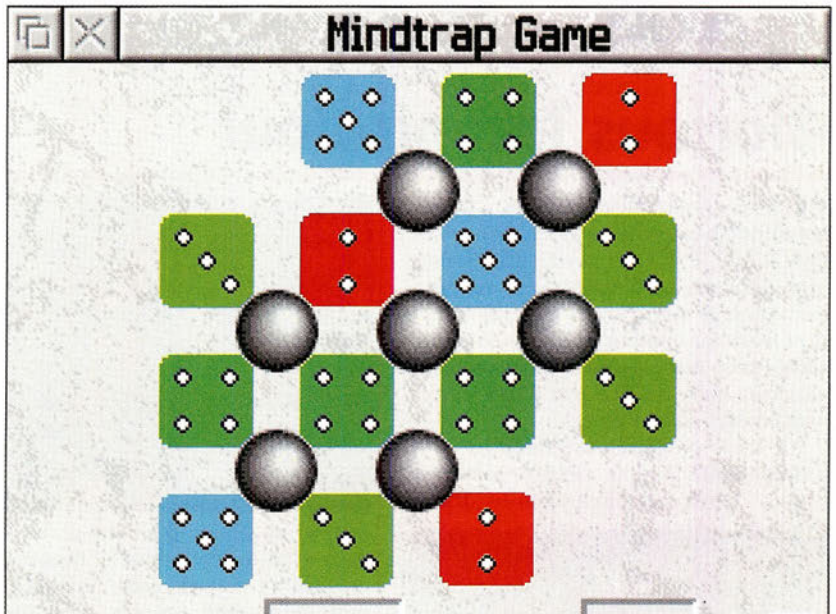
The playing area consists of a six by four array of squares, some or all containing playing pieces. These are both colour and number coded. On top of them there is a second five by three array of pin holes, some or all of which may contain pins. Below this main section of the window is an area displaying the number of moves remaining, the passcode for this level, and the current layer number. Finally, below these is a row of icons indicating the colour of each column.

The aim of the puzzle is to line up all the blocks of each colour in the appropriate column one to six, left to right. To move the playing pieces around, use the mouse as follows:

Select: rotate surrounding pieces anticlockwise
Adjust: rotate clockwise
Shift-Select: swap surrounding four pieces with those in the layer above
Shift-Adjust: swap with the layer below.

This is one of those deceptive puzzles – the first few levels start off very easy, but you'll soon arrive at grids with bizarre arrangements of pegs and suddenly it becomes very tricky to move the blocks around.

A word of warning; notice you have a limit to the number of moves. The first time we played this game we ran out of moves without realising and couldn't work out why the game had stopped responding to us!

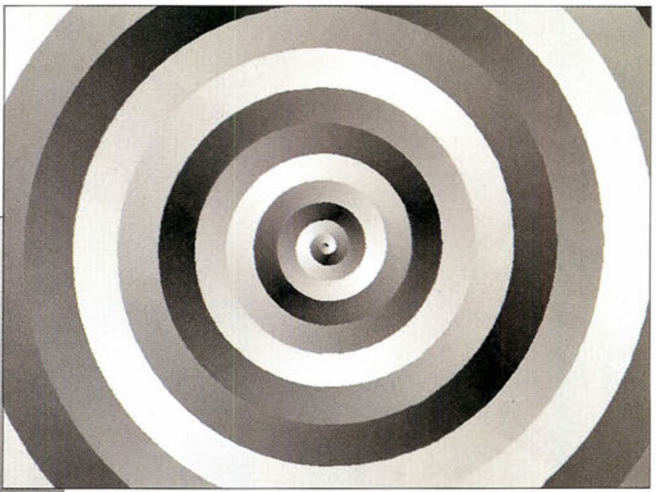


On a Risc PC, the level code window can be too narrow if a font such as Homerton.Medium is used, meaning you lose some of the vital password. Switch to the System font or – as here – some other narrower font to see all 20 letters.

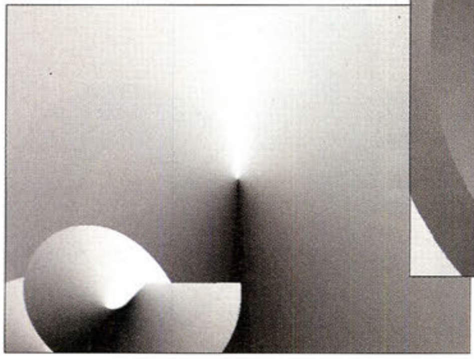
Spiral stares

Author: Phil Norman

Here are two very nice little graphical ditties for the Risc PC from Phil Norman. *CorkScrew* and *SpiMetal* are very much *INFO classic demos, both drawing a pattern in grey and then (once Space is pressed) using a psychedelic colour cycling routine to animate the result, only because these are Risc PC demos do they both use 256 shades instead of 16.



SpiMetal uses circles to plot an enlarging spiral while *CorkScrew* first draws an amazingly convincing metallic 3D spike, then covers this with a corkscrew. In both cases we think the colour changes after this happen rather quickly and a more subtle change would look better – if you agree then try changing the program; if not then we're sorry to have caused offence.



On the stroke of Mid(i)night...

Author: Mr P Adamson



What with it being October and everything, here's a creepy offering from our current resident MIDI-ologist Mr P Adamson.

Halloween is 'an original composition based on the halloween idea of *Dance Macabre*. The dance is in a minor key before going into *Oh when the saints...* done as a waltz and still in a minor key. The original theme returns in a major key representing the triumph of good over evil.'

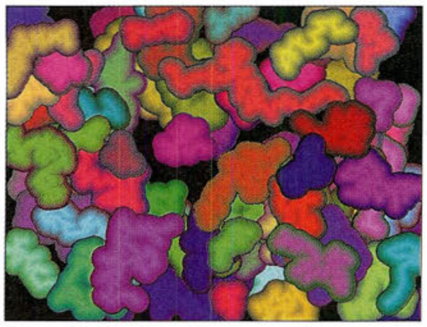
The file should load into *Rhapsody*, *Perform*, EMR *Studio 24+* or any other MIDI-compatible program. As we've mentioned before, we are sadly lacking in the MIDI department in the *INFO offices, so we have been unable to hear any of Mr Adamson's compositions. If anyone would like to donate us any unused MIDI equipment then we'd be only too pleased...

Glorious Technicolour

Author: Dave Lawrence

Three homegrown *INFO Risc PC specials hot off the presses: *Incandesce, Nematode* and *Taglia*. If you're pining after some Vibe-isms and simply can't wait until the next batch of weird and wonderful offerings from Jan himself, these three progs should keep you suitably subdued until the nice men come to give you a new jacket with buckles down the back.

All three programs use thick lines, a concept which is quite tricky to handle in BASIC – obviously circles can be drawn





instead of points, but rotated rectangles have to be drawn instead of lines and that dreaded foe 'trigonometry' has to be dealt with. *Incandesce* uses this for its glowing brain-like/lightning-like display.

Taglia is a bit of cheat and just uses circles, and always ensures that they are close enough together never to leave a gap. The trail drawn is also suitably wiggly to make it unnecessary to draw thick straight lines. It stores a small buffer of positions so it can first draw the path with slightly larger black circles to give the trail a black edge. Finally, *Nematode*. This uses a similar algorithm to *Taglia* to draw the 'worms', so it uses the close-by circle method. It also stores a buffer of positions so it can draw the trail in ever decreasing circles to give the shiny cylindrical effect.

All three programs use an 800 x 600 32,000-colour mode. This will need at least 1Mb of VRAM. Note the use of the extended form of GCOL – GCOL R,G,B to set the colour without having to resort to the complications of ColourTrans.



Bunch of fives

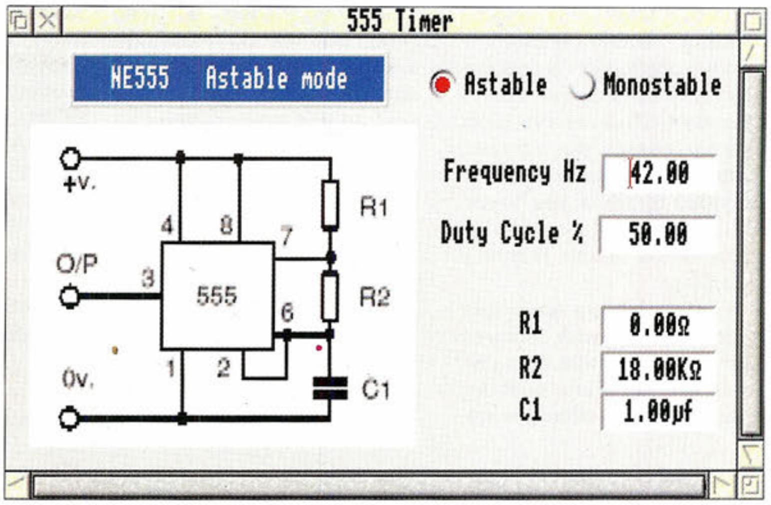
Author: Paul Marshall

The fives we are referring to, of course, are those in the name of the famous 555 timer chip. Regular electronics expert Paul Marshall provides yet another invaluable utility for the wireheads among you.

'555 is for electronic circuit designers,' says Paul. 'It calculates the value of resistors and capacitors needed to complete a timer circuit using the famous 555 integrated circuit.

'Both Astable and Monostable modes are catered for. Select the mode by clicking on the appropriate radio button. Enter the required time delay (monstable) or frequency (astable) and press Return. Component values are displayed using the nearest preferred value from the 12 values per decade range.

'If you enter resistor and capacitor values, the frequency or time period will be displayed. By default values are in ohms, microfarads, hertz and seconds. Suffixes *M* or *K* may be used for resistor values, *u* (for μ) or n for capacitors and *u* or *m* for time delay.'



Blank Check

Author: Dave Acton

Adam Curtin has put in a request for a screen blanking utility. He says that on the Apple Mac, if you put the pointer top-left the screen blanks immediately, whereas if you put it top-right, the screen never blanks at all.

This seems quite a sensible state of affairs. After all, if you know you're going to leave your desk for a good while, you might as well switch the screen off as you go. Also, the *BlankTime command provided by RISC OS's ScreenBlanker module has an option to claim or release the write character vector WriteCV. On my machine, the vector isn't claimed, which means that if I've got some long running program chugging away in a task window, printing out useful information as it goes, it can be annoying when then screen continually blanks out.

So, helpful souls that we are, we present a small module – *BlankCheck* – to add the functionality requested by Adam.

The task was not as easy as it first seemed. One obvious way of doing it is to write a small BASIC application which continually monitors the mouse position in null events and, seeing that the pointer has strayed into one corner or another, issue the appropriate screen blanking command. This would be far from ideal though, since the application might take up 32K and would certainly waste a lot of processor time.

The best solution might be to provide a replacement ScreenBlanker module, and indeed we may well do this in a future ✱INFO. There are quite a few other tweaks that would be nice – for example, setting a minimum distance for the mouse to move before waking up the screen, so that nudging the desk doesn't accidentally switch on the monitor.

In the end, we settled for a compromise to be going on with – a module which uses OS_CallEvery to set up a polling routine. This reads the mouse position using OS_Word 21, 4 and classifies it as either top-left, top-right or somewhere else. If the mouse status has changed, OS_AddCallBack is used to get the OS to call an appropriate routine. Since our polling routine is effectively an interrupt handler, we have to be careful what we do in it. (As it is, we have to preserve the supervisor mode link register before we read the mouse position.)

If the pointer has moved into a corner, we read the old ScreenBlanker delay with the undocumented call SWI "ScreenBlanker", 4 which returns in R1 the current delay in seconds. The delay is then set to either 0 (infinite) or 1 (short) depending on the corner the mouse is in. Now, herein lies a problem. Hard-wired into the Screenblanker module is a check which always ensures the delay is never less than five seconds or so. We can do an instant blank with SWI "ScreenBlanker", 0 but the mouse is likely to move a pixel or two afterwards in which case ScreenBlanker will switch the screen back on again!

The rather inelegant solution is to use OS_CallAfter to call a short routine to do an instant blank about a fifth of a second later. This gives the mouse time to settle down, and in any case, we have changed the delay to five seconds, so the screen will blank quickly even if a freak earth tremor joggles your desk.

When the pointer moves back out of the corner, the old delay is restored. Bizarrely, SWI "ScreenBlanker_Control", 4 does this with R1 containing the delay in centiseconds, and not seconds like the read call.

How far in the corner you have to be can be changed by altering the value of leeway in the source. Currently, the leeway is eight OS units. Obviously the screen dimensions are read with OS_ReadVduVariables and we have a small service call routine that recalculates the values if the mode has changed.

If you want to know more about the undocumented ScreenBlanker calls by the way, refer back to the May 1995 issue of *Acorn User* in which we gave a full breakdown.

Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5/3.6
Lottery/Syndicate	*Yes*	*Yes*	*Yes*
BlankCheck	*No*	*Yes*	*Yes*
Marbles	*No*	*Yes*	*Yes*
Incandescence	*No*	*No*	*Yes (1)*
Nematode	*No*	*No*	*Yes (1)*
Taglia	*No*	*No*	*Yes (1)*
Iconiser	*No*	*Yes*	*Yes*
555	*No (2)*	*Yes*	*Yes*
CorkScrew/SpiMetal	*No*	*No*	*Yes*
MindTrap	*No*	*Yes*	*Yes*
Calendar	*Yes*	*Yes*	*Yes*

(1) 1Mb VRAM is needed to run these

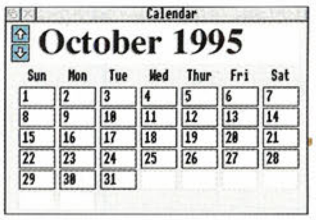
(2) The program runs, but parts of the the display are missing.

Calendar

Author: Brian Widdas

Don't be misled by the cryptic heading. Brian Widdas's Desktop application is nothing more and nothing less than a calendar. Click on the icon and up comes the current month. A minimalist menu is provided to allow you to set the month, and a couple of arrows allow simple skipping to and fro.

It's refreshing to see a utility uncluttered with features you'll never use that does just what you need and nothing else. *Calendar* should work until 2100, although as Brian points out, the OS_Word call used to read the current date only returns two digits for the year, so will have problems at the end of the century. Watch this space for an update...



Pinboard wizardry

Author: Darren Green

If you've ever wanted to iconise your windows single-handedly, or your keyboard is under a pile of discarded pizza boxes and both Shift keys are out of sight, Darren Green's utility is for you. *Iconizer* is a module which, when installed, applies a simple filter to all applications. Whenever the back icon of a window is clicked with Adjust, an iconise message is sent to the Pinboard instead.

Iconizer may be the last utility of its kind we will carry in these pages, the reason being that Nick Craig-Wood's all-singing all-dancing Desktop manager (see page 64 of this issue) can neatly take over the role of many of the little WIMP add-ons we've carried over these past months.

By the way, if you have enjoyed, or even written any of the many Desktop tweaks that we have carried in *INFO, why not re-write them to work under *Director*? We would of course be delighted to hear from you.

Carry the flag

Alexander T Smith has inquired about reading the status of the carry flag after an SWI call. It seems he is working on an interface between his Casio fx-7700GB and his A3010 and the particular SWI calls he uses return vital information in the flags of R15.

Well, Alexander, there is a simple extension to the BASIC SYS command that allows you to read just such information. In fact, the four flags NZCV (negative, zero, carry, overflow) can all be read. We thought about telling you how in a four-part series, but figuring you might not be able to handle the suspense, here is how you read all four in one go.

Normally, to read registers from a SWI call, you would use something like:

```
SYS "OS_Thingummy",fred,jim TO ,,sheila
```

which would pass the values of fred and jim in R0 and R1 respectively, and return the value of R2 in sheila. An extra semi-colon allows you to give a variable into which the four flags are read:

```
SYS "OS_Thingummy",fred,jim TO ,,sheila;flags
```

Although the flags actually occupy the top bits of R15, they are shifted down before they are returned in BASIC, so bit 0 of flags is V, bit 1 is C and so on.

So a simple:

```
IF (flags AND 2)<>0
```

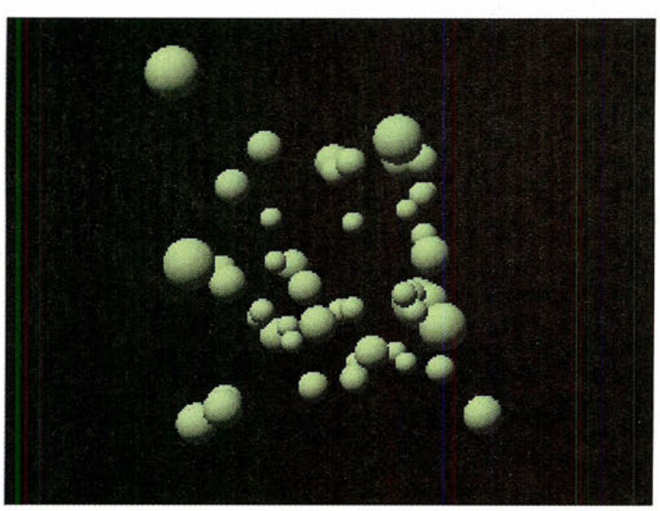
means 'if carry is set'. The most useful bit to read is generally V, since this is set if an error occurs. You should always use the X form of any SWI that is likely to go wrong (for example, OS_Find, which might be asked to open a file on a disc that is no longer in the drive) and read the V flag to see if the call succeeded. Also read R0, which will point to a suitable error message.

Incidentally, if you can think of a clever or witty four-word mnemonic for remembering the order of the bits NZCV (like Ninety Zebras Cross Venezuela) we may offer a small reward for the best...

The Eli-Jean Marbles

Author: Eli-Jean Leyssens

We've just received a piece of e-mail (don't forget you can mail us at *starinfo@acornusr.demon.co.uk*) from Eli-Jean Leyssens describing a quick fix to Alistair Turnbull's *Marbles* demo from the August issue. This allows the program to run on RISC OS 3.1. The only reason it fails to run is, in fact, the useful short cut described above for setting an RGB colour with GCOL r,g,b! Eli-Jean's fix to convert this back into a call to ColourTrans. The line is changed from:



```
370 GCOL 16+B*240, 16+B*240, 16+B*240:
```

to

```
370 SYS"ColourTrans_SetGCOL",INT(16+B*240)*(1+2^8+2^16)
```

A full copy of the program can be found on the cover disc.

***QUIT**

All submissions, be they large applications or one-line doodles, are very welcome. All manner of what have you to the usual address:

***INFO, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP.**

You can also use that wonder of modern science, the internet to e-mail us at: starinfo@acornusr.demon.co.uk

Please put your name, address and program title on every disc and include a text file containing at least your name, address and disc contents. An SAE will ensure your discs are returned and any other instructions, diagrams, saved screens and so on are much appreciated. And if you e-mail us, please don't forget to tell us your real life address too.

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• Acorn AKF17 monitor with leads, £50 ono. Tel: 0181 715 9688.

• Genesis Plus £15, 1st Word Plus £10, E-Type £7.50, Powerband £7.50, RISC OS 3 applications guide £3, user guide £3, both £5. Tel: (01962) 880250 evngs.

• Wanted: Acorn, 2Mb RAM (minimum), RISC OS 3.1, 20Mb HD (minimum), Stroud, Gloucester area. Tel: (01453) 834448.

• A5000, RISC OS 3.11, 4Mb, 125Mb HD, 14in multisync monitor, PC emulator, lots of PD dust covers, all boxed, excellent contition, £800 ono. Tel: (01704) 24618.

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• Acornsoft/Colton View Professional ROMs, discs, manual for use on BBC up to Master Compact systems, boxed as new £30 ono. Tel Darran: 0181-523 4920.

• A4 portable, 4Mb, 60Mb HD, RISC OS 3.0, PC Emulator, mouse, some software, manuals, boxed VGC, £850 ono. Tel: (01464) 711192.

• Archimedes A305, 4Mb RAM, 40Mb HD, RISC OS 3.1, colour monitor, PC Emulator, plenty of software and games, £425 ono. Tel Jason: Rotherham (01709) 370112.

• Acorn contacts wanted from UK and worldwide. PD swap or just contacts. Reply guaranteed: M Gunning, 51 Cliff Road, Leeds LS6 2EZ.

• A4, 4Mb/60Mb HD, brand new battery pack and screen cables, £1050 ono. Available from Birmingham area or Surrey (travels between the two!) Tel: (01932) 220781 or 0121-440 3476.

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• A5000 LC, 4Mb RAM, 40Mb HD, RISC OS 3.1, multiscan monitor, PC Em, great value, excellent condition £625. Tel: (01487) 740319 evngs and wkends.

• Wanted for A3010: monitor, HD, memory upgrade, MIDI, contacts for PD software, also wanted: tapes for Commodore C64 (+ joystick wanted). Tel Robert: Manchester 0161-434 0004.

• A4000, 2Mb, 80Mb HD, manuals, magazines, lots of software and scart cable. 100% working, no bad sectors, excellent condition, £425 inc. Tel: (01935) 25974.

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• BBC B with 128K expansion ROM/RAM board and 40/80 track disc drive. Lots of software and ROMs, £65 ono. Tel Jason: (01798) 812436.

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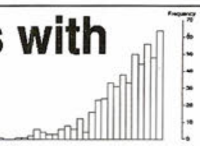
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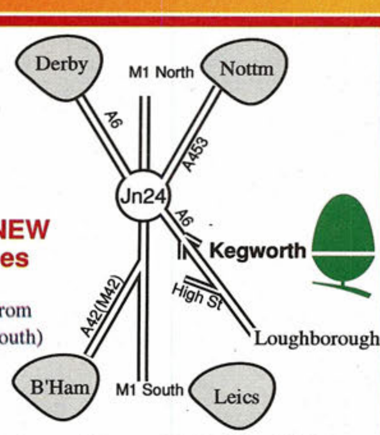
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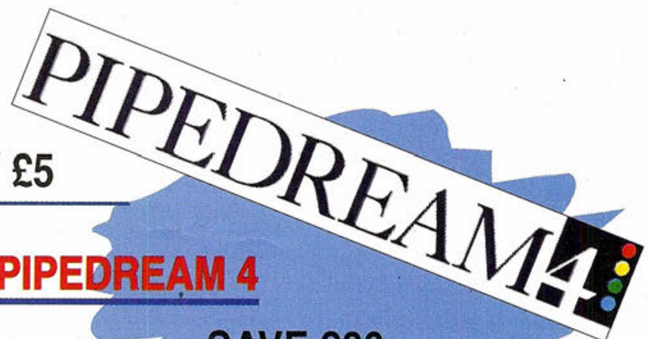
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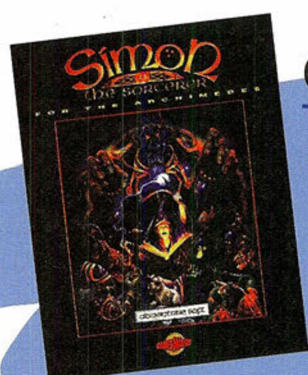


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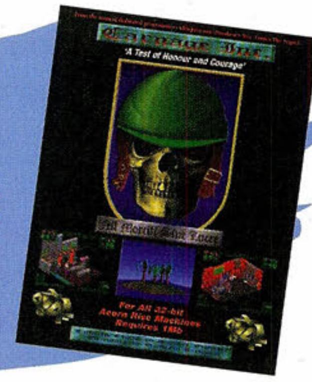


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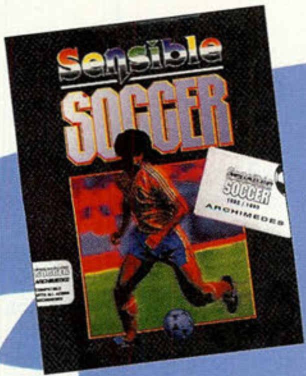
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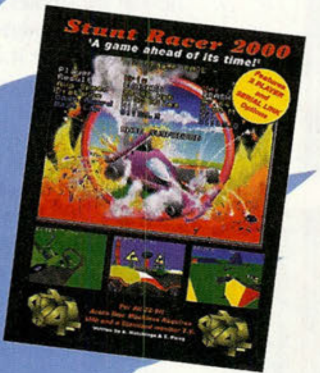
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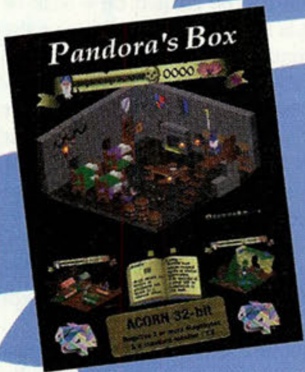
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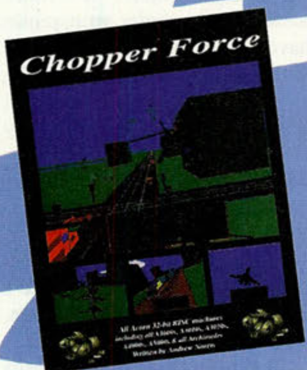
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The Moxon Interview

Walter Briggs

> For the first time since I got into computers, I'm able to create computer artwork which is the same quality as my traditional air brush work

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The first type, and the one which normal people like you and me are most comfortable with, is when you look at it and think: 'I could do that, if I really wanted to.' This is the type of talent practised by 90 per cent of performers on *Top of the Pops*, a wide variety of modern artists, and people like Paul Daniels. It is, if you like, common-or-garden talent.

Then there's the other type, the one that applies to people who can do things that others can't. Like inventing the Rubik's Cube, writing best-selling novels *that are also well-respected*, or playing sport for your country. This is the sort of talent that Walter Briggs has: he creates graphical masterpieces that most of us simply can't.

Walter first became well known in the Acorn world when he won the first *ArtWorks* clip art competition with a stunningly-detailed picture of a kingfisher: that's why his artwork is produced under the company name Kingfisher Graphics.

'I got into computers totally by accident,' remembers Walter. 'I was taking a course on book-keeping with PCs, and the bloke giving the course was chatting away and mentioned he had a system at home that was great for graphics. I was interested, so he showed me his A410/1 running *Poster*. Well, I was running a sign writing business at the time and I bought an Acorn just to run *Poster* – it was so useful for designing sign templates.'

Then Walter had an accident that put his back out, and the sign writing business had to go, along with Walter's favourite artistic medium, the air brush.

'I love my air brush,' says Walter. 'The subtlety of the strokes, the way the colour underneath still shows through, and the way it is so smooth. But I can't use it any more – I spend about 22 hours a day lying on my back – so I had to learn to use a computer.'

The solution? A friend of Walter's bought him *ArtWorks*, and he discovered that the graduated fills could create effects approximating that of an airbrush, so the kingfisher was created.

'So *ArtWorks* was, and still is, great,' Walter says. 'But when I saw *Studio 24*, it was the first time I'd seen a real air brush on a computer. The way the colour builds up gradually is just like the real thing, which is vital for air brush work.

'It's great. With a handful of packages I can create anything that can be created on a Mac or PC, but everything is so quick and intuitive on the Acorn, not to mention cost-effective. People moan about the lack of choice in graphics software on the Acorn compared to the other platforms, but the *quality* is there on Acorns. For the first time since I got into computers, I'm able to create computer artwork which is the same quality as my traditional air brush work.'

Surprisingly – at least for those of us with a clichéd view of graphic artists – Walter uses the mouse, rather than a graphics tablet, even though he has a perfectly good A5 tablet to hand.

'After using a mouse constantly over the last four to five years, the graphics tablet felt really strange,' says Walter. 'I can use a mouse so much more effectively: I have it on the fastest setting, and use it to the side of me, with a 17in monitor at the foot of the bed.

'A mouse works well because the way I paint is with short, regular strokes, building up colour. For example, putting a shadow next to a nose may take 25 strokes: in fact, people watching me draw get bored, it's such a subtle process!'

That shouldn't be a problem with Walter's latest project, though. In conjunction with Pineapple Software, Walter has been recording tutorial videos to teach people how to get the best out of *ArtWorks*.

'In traditional art,' says Walter, 'it's more about skill than technique. Computer art reverses this: you need to have a good grip of technique to make the most of the system. This creates the problem of jargon: who knows what an eight-bit mask is, anyway? And exactly who is Ray Tracing?

'If people can learn technical skills then they can develop their artistic skills. You get great satisfaction from explaining things to people who want to learn, and with computers people can experiment. With real air brushing, if you make a mistake you have to sand it off and start again. These days you just click on Undo. It's brilliant.'

So, next stop it's Walter Briggs, Graphics Teacher. Graphics Guru, more like.

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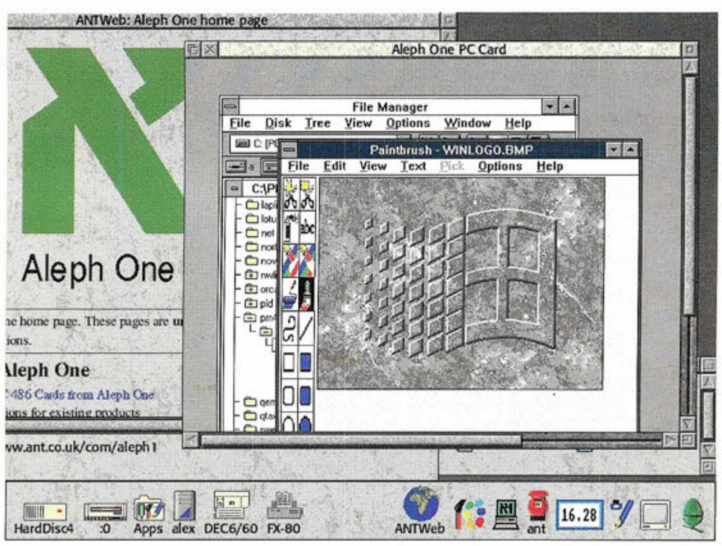
Why are you waiting

when you could be using an Aleph One Risc PC card?

You won't wait around for an Aleph One Risc PC card. Its powerful 486DX processor will complete tasks much more quickly than the alternatives. The card fits easily into your Risc PC's second processor slot in a few seconds.

Fast processors

Software executes at real PC speeds with a choice of powerful 486DX-40 or 486DX2/80 processors blazing through all your tasks.



Windows support

You can use most standard Windows or DOS software on the Risc PC card – at the same time as your existing RISC OS software. You may also wish to connect to existing PC networks.

ARM graphics support

While you're working in Windows, the RiscPC's ARM processor is still busy acting as a graphics accelerator to further boost performance. High-resolution Risc PC video modes are supported, up to 1280x1024 resolution. Subject to suitable VRAM being fitted to the Risc PC, you can enjoy up to 24-bit colour and a 256 colour palette in 8-bit per pixel modes.

Share Acorn peripherals

Save money compared with the cost of buying separate systems: the PC card can use all your Acorn peripherals including hard discs, removable discs and CD-ROMs, Ethernet network cards and printers.

Connect to PC networks

Use the Risc PC card with optional networking software to bridge between your computer and local area networks. Any PC network server can be used – Novell Netware or Windows .

Recommended retail prices

Choose from the 486DX-40, running at 40MHz, for **£349**, and the 486DX2/80, running at 80MHz, for **£399**. Cards are available direct from Aleph One.

Also still available at new reduced prices – Aleph One podule 486 cards for the A5000, A540, A4x0. 486SLC-25 is £299 and 486SLC2/50 is £349 (prices exclude VAT and RAM). RAM for Risc PCs and podule cards £99 for 4MB, £199 for 8MB and £379 for 16MB. All prices exclude VAT.

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